WOOD PRODUCTS

THE TECHNICAL AND NEWS MAGAZINE OF THE WOOD PRODUCTS INDUSTRY

STURDY

Smooth Running

The exceptionally sturdy construction of the Porter No. 612—20,000 RPM router and its precision building gives you facilities with which to make cleaner cuts, do it faster, and with a resistance to maintenance that features all Porter equipment.

The bearing lubricating system is automatic, recirculating, positive, clean, and foolproof.

Bulletin sent on request.

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GRAND RAPIDS 4, MICHIGAN

December 1949

Read, Check and pass on to . . . ☐ General Manager ☐ Sup't. ☐ Purch. Agent ☐ Machine Foreman ☐ Cabinet Foreman ☐ Finishing Foreman

HARDWOODS
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QUALITY

Industrial Oak • • • Wagon Oak

Furniture Semi-Dimension

Red & White Oak Red & Sap Gum

Ash Hickory Cypress Elm

Solid and Glued-up Treads

Thresholds

• • •

Products of

FORDYCE LUMBER COMPANY

Manufacturers of Quality Products

Since 1889

Call our nearest representative or address the home office at

FORDYCE, ARKANSAS

Here's a way to get better sanding at lower cost...

Apply the 2-Factor Formula

Applying the *2-Factor Formula* is as simple as this: *specify quality abrasives* and then *use them correctly*. As a *practical* formula, it has no equal...for stepping-up production...improving finish...reducing costs.

An easy way to specify *quality* abrasives is to ask your jobber for abrasives by CARBORUNDUM—a trademark that *means* quality wherever abrasives are used. You get belts, discs, rolls, and sheets that cut fast...clean...cool. You avoid burning, loading, glazing, shedding, cracking. You get abrasives with *built-in quality* that beats down costs.

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COATED ABRASIVES BY

CARBORUNDUM

TRADE MARK

BELTS SHEETS ROLLS DISCS

New Plant of the Coated Products Division

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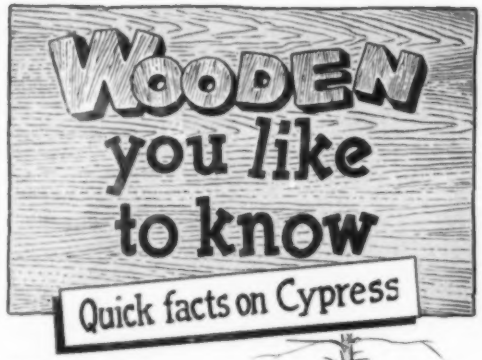
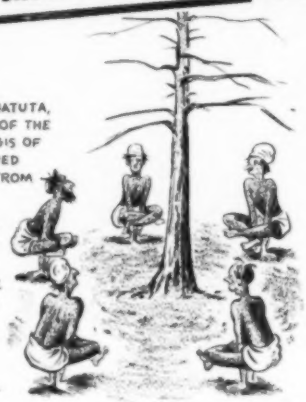


FOUNTAIN OF YOUTH!

ACCORDING TO IBN BATUTA, MUSSULMAN TRAVELER OF THE 14TH CENTURY, THE YOGIS OF CEYLON, INDIA, BELIEVED THAT EATING A LEAF FROM A CERTAIN SACRED CYPRESS WOULD RESTORE THEIR VIGOR AND YOUTH... SO THEY SAT AROUND THE TREE IN A CIRCLE WAITING FOR LEAVES TO DROP!



OLDEST LIVING THING!

IN THE VILLAGE OF SANTA MARIA DEL TULE, OAXACA, MEXICO, IS A CYPRESS THAT MANY CLAIM IS THE OLDEST LIVING THING ON EARTH. IT IS BELIEVED TO BE 5,000 OR MORE YEARS OLD!

GIFT FROM NAPOLEON!

ON THE GROUNDS OF THE JUMEL MANSION IN NEW YORK CITY IS A GROUP OF CYPRESSES GIVEN TO THE ORIGINAL OWNER BY NAPOLEON, WHO IMPORTED THEM FROM EGYPT.

Atlantic is your headquarters for hardwoods of all kinds. For quotations or information write, wire or phone.

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Headquarters for Hardwoods
88 Broad Street, Boston, Mass.
1035 Seneca Street, Buffalo, N. Y.

WOOD PRODUCTS

ABC

431 S. Dearborn St., Chicago 5, Illinois

Vol. 54 DECEMBER, 1949 No. 12

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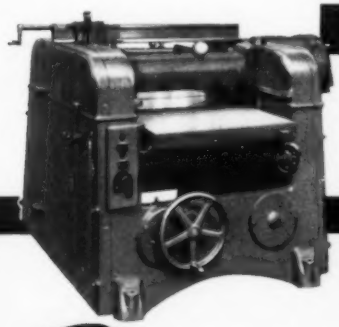
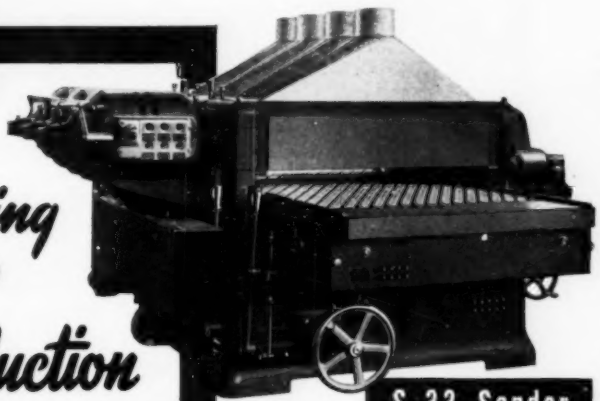


B-5 Single Surfacer has clean-cut design for safety and efficiency. Incorporates features to assure quality production, reliability, ease of operation—such as built-in drive, dust-proof motor, chain drive for feed rolls, built-in bar for knife setting, jointing and sharpening devices.

3 cost-saving ways to Quality Production

These three Yates-American machines bring low-cost, *quality* production to furniture factories and other woodworking plants. Back of each machine is the valuable Yates-American experience gained in 66 years of satisfying requirements for woodworking equipment — your guarantee of the best in performance.



S-33 Sander handles pieces as short as 5 in., 1/16 to 6 in. thick. Responsive controls for micrometer accuracy. All controls easily reached. Varidrive permits coordinating speed with that of other machines. Base, sides and bed are massive one-piece castings to provide utmost stability.

Write for complete information on these and other Yates-American woodworking machines for every purpose.

C-99 Moulder is a heavy-duty machine that will produce a uniform, smooth, even finish on light as well as heavy mouldings. Has strength and ruggedness—extra sturdy for operation at high frequency—compact to utilize every inch of floor space—offers accessibility for rapidly changing set-ups.

Yates-American
MACHINE COMPANY—Beloit, Wisconsin

Branch Offices
Atlanta, Georgia
Memphis, Tennessee
Portland, Oregon

MATCHERS • BAND RESAWS • SANDERS • SURFACERS • CIRCULAR RIPSAWS • HEAD & KNIVES

ESTABLISHED 1883
Wood-Mosaic Co.
INCORPORATED
HARDWOOD FLOORING LUMBER
DIMENSION

August 19, 1949

another reason why—
DIEHL RIP SAWS are 1st choice!

Mr. Fred A. Collinge, Pres
The G. M. Diehl Machine Works,
Wabash, Indiana

Dear Mr. Collinge:

We believe you would like to know that we are very well pleased with the Diehl straight line Rip Saw which you delivered to us about a year ago.

This machine is being used in our flooring plant for edging and for cutting to width our oak flooring. As you know it is required that we maintain a completely straight edge on boards up to sixteen feet long and that when such boards are cut to sixteen feet long and over 1/64 of an inch from one end to width they not very previously tried to do this work with a straight line rip saw which we thought to be the best on the market but were unsuccessful and had to resume the use of a slow traveling head saw. However, since installing the Diehl nearly a year ago we have found it capable of giving us the accuracy we require and have therefore been completely satisfied with it.

Yours very truly,

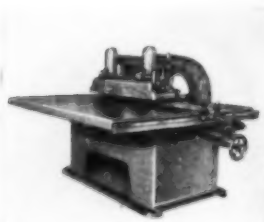
Wood-Mosaic Co.
Rufus Waters

Rufus Waters, Supt.
Parkay-Flooring Department

RW/sh

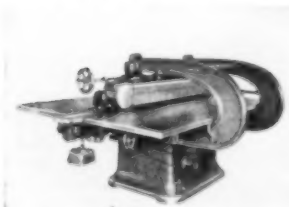
CUTTER GRINDERS

3 popular models—bench and pedestal style.

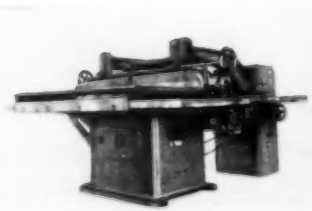


No. 750 RIP-SAW
For precision sawing and cutting open end and hollow glue joints up to 250 feet per minute.

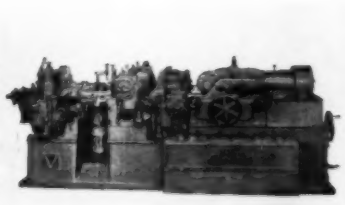
THE G. M. DIEHL MACHINE WORKS, INC.



No. 890 VENEER SPLICER
The modern method of edge joining veneers from 1/150" to 3/16"—up to 85 feet per minute.



No. 900 ELECTRONIC SPLICER
For edge joining veneers and core stock from 1/8" to 1/2" in thickness—up to 40 feet per minute.

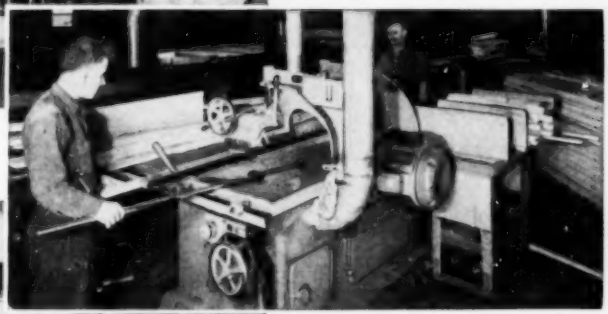


DIEHL-VONNEGUT MOULDER
Features the famous trouble-free spindle — operates with maximum economy — 5 sizes . . . 4 to 12 inch, 5 head models.

Kindly mention WOOD PRODUCTS *when writing advertisers.*

Veneer room at Mersman Bros., Celina, Ohio, with a Diehl No. 900 Electronic Splicer at the extreme left and two Diehl Veneer Splicers and a No. 69 Veneer Jointer to the right.

Diehl Rip Saws in the Jamestown Veneer & Plywood Co., Jamestown, N. Y.



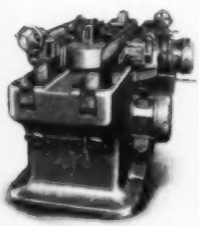
A battery of Diehl Tapeless Veneer Splicers at the Splicedwood Corporation, Mellen, Wisc.

CUTTERS AND CUTTERHEADS
Stock and custom models. Write for catalog and prices.

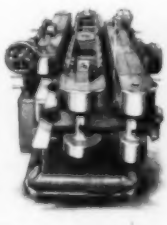
EVERY day Diehl Woodworking Machines help to solve the production problems in hundreds of woodworking plants . . . by doing the work faster, better and in many cases nearly automatic, resulting in far more production at greatly reduced cost. Ask your Diehl representative to tell you the story of Diehl . . . how Diehl cuts costs, improves workmanship and efficiency. Or write direct for illustrated literature.

No. 33 RIP-SAW
The Junior of Diehl Rip-Saws—a favorite for planing mills, etc. No. 55 Rip-Saw for glue joints and heavy ripping.

WABASH, INDIANA, U.S.A.



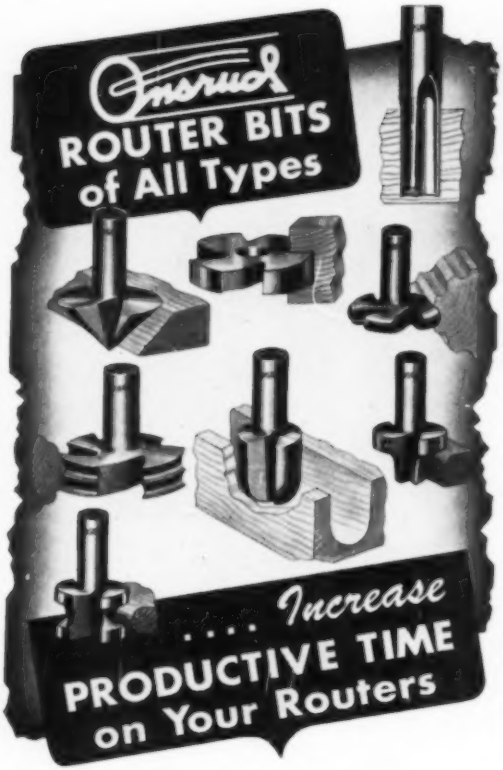
No. 660 GLUE JOINTER AND EDGE MOULDER
Dual purpose machine—cuts intricate mouldings, perfect glue joints—up to 100 F.P.M.



No. 69 VENEER JOINTER
Handles volume production of veneer jointing and edge gluing—in bundles up to 2" thick—up to 50 F.P.M.

No. 725 STRAIGHT-LINE CUT-OFF SAW
Automatic—up to 55 strokes P.M. —thicknesses to 5"—widths to 22". (Also No. 724, manually operated).

No. 200 EDGE GLUING MACHINE
Handles core stock from ⅝" to 2" in thickness—panels up to 37" in width, up to 30 F.P.M.



H.S. Steel and Carbide Tipped

Repeated tests in such widely diversified industries as woodworking, aircraft manufacture, railroad car building, auto body building, and photo engraving have consistently given these cutters top-ranking acceptance. Their long cutting life and ability to cut freely and smoothly has made them a standard of comparison, by which other cutters are measured.

Heat treatment of high speed bits and cutters is automatically controlled in modern electric resistance furnaces of controlled atmosphere type. This avoids scale and carbonization, assuring a uniform structure for best results.

Onsrud bits are completely finish ground shanks accurate to micrometer measurement, the size and brand engraved on each unit for your protection.

Onsrud Cutter Mfg. Company

802-820 E. Broadway
Libertyville, Illinois

THIS FREE BOOK WILL HELP YOU

Besides describing a wide variety of cutters for routing, shaping and carving, Catalog 44-S contains helpful clues to profit-increasing ways of doing many jobs. Write for your copy today. There's no charge and it will help you get more for your cutter dollars.

Question & Comment

1249—1

Pressed Plywood Circular Trays

Editor, Wood Products:

I am endeavoring to find a source of supply of pressed plywood circular trays from 8 to 24 inches in diameter and thought that your publication might know of some woodworking company that produces such articles.

These trays in decorated and finished form are seen in gift shops, but I want the pressed discs for my own decoration.

Yours truly,
D. K.

1249—2

Machine for Sizing Dowel Ends

Editor, Wood Products:

Could you tell me if there is anyone who manufactures a machine for sizing dowel ends before gluing?

This machine should be of the compression type that compress the dowel only where it enters its mating part.

Yours truly,
A. W. H.

1249—3

Wants to Build Road-side Drive-ins

Editor, Wood Products:

We are seriously interested in purchasing plans and booklets concerning the building of road-side stands, drive-ins, road-side markets, churches, small stores, etc.

Yours very truly,
R. W. & Co.

You're Welcome, Mr. Green

1249—4

Editor, Wood Products:

While I believe I thanked you folks on the telephone for the effective way you treated our "Trees Evrywhere" story in your November issue, I have been unable to arrange with you the details for a reprint. We will be in a position early next week to do this, and either Miss Wysong of this office of the writer will get in touch with you.

Very sincerely yours,
Burdett Green, Secretary-Manager
American Walnut Mfrs. Assn.

Wants List of All Trees

Editor, Wood Products:

1249—5

We note that in the last issue of "Wood Products," November, 1949, you state that there are 1,125 species of trees in the United States.

The writer is very interested in knowing what these species are and if you have a list of them on hand, will you kindly send us a copy.

Very truly yours,
S. G. Co.

This sturdy, handsome dining room suite, manufactured by Rockford Republic Furniture Company, Rockford, Illinois, is bonded with a Monsanto Lauxite adhesive.

Looks are NOT deceiving when LAUXITE bonds the plywood

Manufacturers of high-grade furniture measure quality by more than exterior appearance. Their tests go deep into the plywood construction. That's why they look to Monsanto for adhesives with particular properties for every type of plywood manufacture.

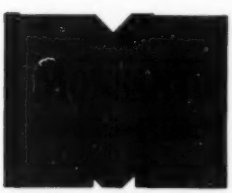
Take cold pressing, for example; there's a Lauxite glue to streamline production techniques because it's foolproof two ways:

1. *Accelerator catalyst incorporated in the resin . . . no chance for error in measuring or guessing amount to be added.*
2. *Catalyst "F", also included, produces a uniform mix regardless of variation in gluten-forming elements in the flour . . . assures proper bonding.*

Just as important is the fact that this Lauxite cold pressing glue is *suitable for flour extension*, dust-free, and unusually convenient to handle. Available in summer and winter grades.

Lauxite: Reg. U. S. Pat. Off.

West of the Rockies, address inquiries to Monsanto Chemical Co., 911 Western Ave., Seattle 4, Wash. Also available in Canada through Monsanto Canadian offices.



SERVING INDUSTRY . . . WHICH SERVES MANKIND

MONSANTO CHEMICAL COMPANY,
Plastics Division, Dept. WPP 6, Springfield 2, Mass.
(West Coast: Monsanto Chemical Company, 911 Western Avenue, Seattle 4, Washington)

☐ Please send me the Monsanto catalog.
☐ Please get in touch for arrangements for plant trial.

Name _____ Title _____
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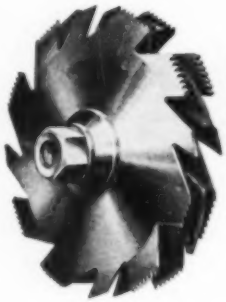
HUTHER BROS. PATENT GROOVER

OR

DADO HEAD



Here is a tool that will make a perfect groove, either with or across the grain, and will leave a perfectly smooth edge. Send for detailed information.

HUTHER BROS. SAW MFG. CO.

ROCHESTER, NEW YORK, U. S. A.

WOOD PRODUCTS COMPLETELY MACHINED

SOUTHERN HARDWOOD— YELLOW PINE AND CYPRESS LUMBER

FLOORING

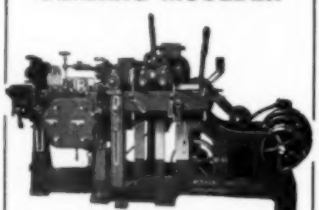
HANDLES & DOWELS

Your Inquiries Invited

ANDERSON-TULLY COMPANY

MEMPHIS 10, TENN.

HERMANCE NO. 60 HIGHSPEED BALL BEARING MOULDER



A modern machine for the Rapid and Accurate production of Small Mouldings or for four side planing. Ideal for detail work. Quick to set up. High spindle speed, 5400 RPM, means fine one-knife finish at fast feeds. Handles stock from the smallest to 6" wide and 3" thick; bed drops 16" for running wide stock on edge. For fast feeds it can be furnished with four knife heads, knife jointers, electric grinder and automatic hopper feed. The low initial cost and many advantages of this machine will appeal to you.

Write for Detailed Bulletin

HERMANCE

MACHINE COMPANY

Williamsport, Pa.

Wood

You believe it?

Burls may be anywhere in the forests of Oregon, Washington or northern California. They're usually found at the base of ash, myrtle, redwood, madrona and maple trees. The most expensive is walnut. Burl is sold by the pound and those lacking color, shape and size are cast aside in the woods.

?

Mexico plans to standardize *lumber* sizes, to facilitate United States sales.

?

Fungicide treatment of *wood*, in which nickel salts are used instead of their more familiar copper analogs, are covered in a patent obtained by Dr. Roy H. Baechler of the U.S. Forest Products Laboratory at Madison, Wis. He has dedicated his patent to the free use of the people of the United States.

?

The arbol de leche *tree* in Venezuela exudes a sap which resembles milk and is used as such.

?

There's an old practical German mode of painting *wood*, window frames, fences and similar things: fresh, fine cement is ground on a stone with milk, as is done with oil paints and equally thick, and this paint is applied like any paint; though the surface of the *wood* shouldn't be polished. Two or three coats of this paint make *wood* firm against weather and also fireproof.

?

Few of the newly developed substitutes for *wood* have a use record of sufficient length to determine their long time stability for home building.

?

Eight out of ten homes in America have been built of *wood*. In the United States in 1940 of a total of 29,313,708 residential structures, 24,908,955 were one-family structures and 23,542,926 had *wood* exteriors.

?

Sawmills cutting *softwoods*, generally grade their products at the time of sawing. With few exceptions *timbers*, dimension and low grade *lumber* are sent to the yard for air seasoning or are shipped green, whereas the upper grades intended for interior finish and flooring are kiln dried because of the use requirements.

?

When a knot is sawed through at right angles to its length a round knot results, when cut diagonally an oval knot results, and when sawed lengthwise, a spike knot results.

1st MAN has a Jack Plane

2nd MAN has a Power Planer

Which Man is Worth More?

CAN all the minimum wage laws or collective bargaining in the world make the first man *worth* as much or *earn* as much as the second?

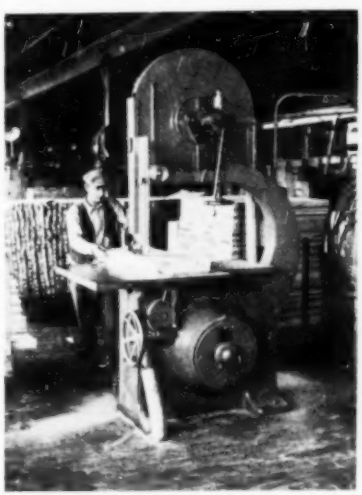
You know the answer is NO. The man with the Jack Plane can probably produce enough in one day to make himself worth, and so earn about $7. The second man can earn $20.

What makes him worth $13 more a day? The *machine*.

Then shouldn't the *machine* earn something, too? What would you say would be fair—the amount it *added* to the man's income—$13?

Actually the machine will get only a trifle. If many men had not saved their money and invested it in machines, the workmen of America would still be working with Jack Planes and earning $7 or less a day—because that's all they'd be *worth*.

Because American people *have* saved their money and *have* invested it in machines which make workers *worth* more, workers get American wages—the highest standard of living in the world.



So — attacks on machines and the profits which make them possible are really aimed at American high wages. Such attacks are beginning to show their foreign accent.

Wherever you find an "Oliver" high speed Band Saw humming, you'll find sawing at a cost the owner knows is rock bottom.

Oliver Machinery Company
Grand Rapids 4, Michigan, U.S.A.
HIGH GRADE MACHINERY

An ECONOMICAL, HIGH QUALITY PLANER

for
FURNITURE SHOPS
CABINET WORK
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MAINTENANCE

- 24" wide
- Planes 1/16" to 8" thick
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- One-Piece Cast Base
- Ball & Roller Bearings thruout
- Finger-Tip Controls
- Micro-Feed Selector
- Direct-Reading Feed Indicator
- Whitney Standard Knife Grinder

WHITNEY

No. 105 SINGLE SURFACER

HERE'S a sturdy, precision-built 24" planer for high quality work and lower planing costs. Its precision construction and wedge raising bed assures smooth, accurate planing, dependable operation and long life. Its flexibility, ease of adjustment and compact design occupying small floor space, make the Whitney No. 105 the ideal quality planer for furniture shops, pattern shops, maintenance shops and schools.

Send for complete information.

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WOOD PRODUCTS

NATIONAL MAGAZINE OF THE WOOD PRODUCTS INDUSTRY

431 S. DEARBORN STREET, CHICAGO 5, ILLINOIS

Vol. 54—No. 12 DECEMBER, 1949 25c a Copy, $2 a Year

The Editor's Viewpoint

It's Been An Exciting Half Century

With the close of the current year, our industry also closes the most exciting, eventful and progressive half century in the history of the wood products industry. Through two great wars and the most rapid growth of any nation in modern times our industry has expanded from one in which wood was used mainly as a building material and our forests as an obstruction to agricultural expansion to one that is now highly mechanized plus a general awareness of the necessity of continued research which has gained such splendid progress.

Standing timber is no longer something to be cut off and burned but rather to be conserved through reforestation and good forestry practices. Lumber, the product of the forest, is no longer used with reckless abandon in the manufacture of an endless number of products but is now looked upon as a prized item to be worked with high speed and high precision tools. Tolerances unknown a few years ago in woodworking are now a commonplace. The development of plywood and the wonderful adhesives that make it so usable has revealed an entirely new horizon for wood as well as aiding in the conservation of our more costly species of timber.

During the half century our industry has had severe ups and downs but the general progress has been steadily upward in quality and quantity of product, new and revolutionary methods of manufacture, in design, and in a much wider application to human needs. Much has been wasted, many mistakes have been made, but the progress shown heavily outweighs the errors. The one great lack in our industry is that of a keener merchandising sense. The time is past when a lumber producer can look upon himself merely as a liquidating agency. Some betterment in this attitude is noted but much more is vitally needed if the wood products industry is to maintain its position with other and newer industries having aggressive sales and development plans.

As we start the last half of the twentieth century we can do so with greatest confidence in a prosperous future. Few if any other industries have so much in their favor. With our raw material as the only renewable natural resource, a wide range of finished products vitally essential to an expanding populace, new fabricating tools and methods second to none plus an active program of research for both raw and finished products, the years ahead look most promising,—and they will, no doubt, be as fully exciting as those in the past.

Annual Index of Articles

For the benefit of libraries and the many individuals and firms that bind their copies of WOOD PRODUCTS each year for future reference, a detailed index of subject material will be prepared and bound in the January issue, covering the articles appearing during the previous twelve months. Separate index pages may also be secured on request to the editor.

MAY WE WISH OUR MANY FRIENDS A GENEROUS ABUNDANCE OF HAPPINESS DURING 1950, AND A JOY THAT CAN COME ONLY FROM A MORE TANGIBLE APPROACH TO UNIVERSAL PEACE AND PLENTY FOR ALL THE WORLD.

Compreg, Resin Treated DENSIFIED WOOD*

By

George K. McLean

Development Engineer, Parkwood Corporation, Wakefield, Massachusetts

Introduction

Compreg is a phenol-formaldehyde - impregnated wood - veneer laminate; compressed under high heat and pressure to a density of approximately 1.35, combining the properties of wood and plastics.

It is manufactured commercially by several laminators in the United States to fill the need for a material that is harder and more staple than wood and lighter than metals.

It is used extensively in the metal tooling, aircraft, textile and woodworking industries because of its dimensional stability, strength and permanent beauty which is obtained simply by buffing the machined surfaces.

Compreg is the generic term applied to resin treated, laminated, compressed wood which is marketed under such trade names as Pregwood, Compregnated Wood, Pluswood and Hi-Den.

The term "compreg" should be reserved for woods that are truly treated, and not be given to laminated compressed wood that may have been impregnated by only a very small amount of glue line resin such as "super-pressed plywood." Impreg which is resin treated but not compressed, and Staypak which is compressed but not treated, are sometimes erroneously confused with Compreg.

The development of compreg has been fostered by two factions, namely those interested in the advancement of wood products and those engaged in the manufacture of laminated plastic products. The object of the former group has been to improve the utility of wood by modifying its properties with emphasis on improving dimensional stability. The plastics industry has recognized wood as a suitable reinforcing medium to augment and broaden a line which included various paper and fabric base laminates. The efforts of such men as Dr. A. J. Stamm and Messrs. Seborg and Millet of the U. S. Forest Products Laboratory in conjunction with industrial laminators of Formica and Parkwood, and resin manufacturers such as Bakelite Corporation, are rewarded as compreg gains recognition as a valuable industrial tooling, structural and decorative material.

Commercially, compreg is a relatively new material, harder and more stable than wood and lighter than metal, combining the better qualities of both wood and plastic. Before the war, production was insignificant, although two large electrical manufacturers produced and consumed quantities of insulating parts where tensile strength, rigidity and moisture resistance were of importance. In 1944, approximately 1,000,000 pounds of compreg were manufactured for aircraft propellers alone. In the post-war era, compreg has filled a need for a hard, durable decorative material where ebony, rosewood and teak supplies were limited and used extensively by designers and engineers in the textile, rubber and metal tooling fields.

Although most woods, with the exception of some hard woods such as oak and the heartwoods of a number of softwoods can be impregnated with resin, commercial compreg is mainly processed from yellow birch or hard maple in 1/16-in. or ⅛-in. veneers, since these woods yield the best balance of ultimate properties and are readily available.

Resins Used

The resin treatment has a two-fold purpose, first to deposit an inert bulking medium within the cell wall structure of the wood to dimensionally stabilize it, and second, to provide an adhesive to bond the veneers. Many resin forming systems have been tried, but none has been found so effective as a water-soluble phenol-formaldehyde resinoid. The water soluble resinoids are formed from phenol and formaldehyde with only limited polymerization, so the molecules remain small enough to penetrate the wall structure readily. Because of the high polarity of these low polymers, the wood is swollen beyond its maximum swelling in water, indicating a selective adsorption of this type of resin within the intimate cell wall structure. Aacohol - soluble phenol - formaldehyde resins which have been slightly polymerized are also used, but since most resins of this type are advanced to larger molecular structure, they do not penetrate the cell wall structure and thus fail to provide the stabilizing effect. Such resins have been used in Europe in making the equivalent of compreg, but they are not used in the United States.

Resorcinol resin can be substituted for penol resin, but it is considerably more expensive. Its only advantages are that the resin can be set at lower temperatures and, since no acid or alkaline catalyst is needed, it offers the possibility of obtaining a product with somewhat better electrical resistance properties.

Cresols can be substituted for part of the phenol, but because of their lower solubility in water they are less suitable than straight phenol and are more expensive in

*A report presented at the third Annual National Meeting of the Forest Products Research Society held last May 3-4 and 5 in Grand Rapids, Michigan.

the United States. Substituting furfural for formaldehyde also reduces the water solubility of the treating system. Furfural-aniline and furfural-alcohol systems have been tried and found to give fairly good dimensional stabilization, but they are difficult to cure completely within the wood. Melamine-formaldehyde resins have not been thoroughly studied as impregnating agents for wood, because their costs is higher than that of phenol resins and there is little likelihood that they would impart superior properties to the wood.

Urea-formaldehyde is the only resin-forming system other than the phenol-formaldehyde system that has received serious consideration for the bulking treatment of wood. Dimethylolurea and urea dissolved in formalin, when buffered at a *pH* of about 8 and cured within the wood, give about one-half the stabilizing effect of water-soluble phenol-formaldehyde resinoids in the same concentration. A 13 percent phenol-resin content of the wood gives it the same dimensional stabilization as a 30 percent urea-resin content. This greater stabilizing effect of phenol resin offsets any price advantage that the urea resin may have. Urea-resin-forming systems are further inferior to phenol systems in plasticizing the wood prior to cure, in preventing springback in compressed wood and in ease of their distribution throughout the wood. Only a limited amount of urea-resin-treated wood has been made commercially.

Compreg Processing

The impregnation of veneer used for processing a grade of compreg with maximum dimensional stability and moisture resistance is best effected by total immersion. At atmospheric pressures, the immersion time is about 24 hours, depending on the thickness, size and type of wood. Impregnating time can be appreciably reduced by vacuum-pressure treatment in an autoclave. The resin content of the veneer based on the oven dry weight of the untreated wood is controlled at about 30 percent, although higher impact values are obtained at lower resin contents with a proportionate loss in moisture resistance.

After impregnating, the resin is allowed to diffuse and then is dried to a moisture content of from 2 to 5 percent, depending on the thickness to which it is to be laminated. Thick panels require a low moisture content to avoid subsequent checking of the product, while thinner material may be processed with better appearance at the higher moisture content.

The laminating of veneers into compreg panels is effected by curing the stock at 300° F. under pressures of 1000-1500 p.s.i. with a cure time of approximately one hour per inch of stock. The thermosetting resins used necessitate cooling to room temperature under pressure which usually is effected in less time than the cure cycle, depending on the temperature and pressure of the available water supply.

The manufacture of compreg on a commercial basis necessitates the use of a large volume of veneer and resin, and presents many varied problems such as the effect of heart- or sap-wood, spring- and summerwood veneer, and aging of resin. Since the dimensional stability of the ultimate product depends on the bulking of the cell wall structure, and the resinoid causes swelling in the immersion stage, strains are obviously set up as the resin flows and chemically cross links under high pressures and temperatures, and the veneer is exposed to severe distortion. To cope with these problems and conditions, the manufacturers must employ constant control in each step of the operation involving veneer inspection, resin analysis, with controlled treatment and drying. The multiple - opening laminating - presses of the Parkwood Corporation are equipped with temperature and pressure recording equipment in order to insure proper cure of panels, and periodic checks are made on the rate of heating in the center of thick panels to avoid building up of the temperature by the exothermic resin curing reaction.

Properties of Compreg

The specific gravity of compreg averages 1.35. Thick sections laminated at specific gravities above this point are subject to checking, while an appreciable drop in the specific gravity results in lower physical and mechanical properties.

The water absorption by compreg, determined according to the old Army Air Forces Specification (3 by $^3/_8$ in. specimen, one in. in fiber direction) after a 24-hr. immersion in water will range, for products of high specific gravity, from less than 1 per cent of the best stabilized compreg to 6 percent or more for the less stabilized compreg. In all cases, a decrease in specific gravity will result in increased water absorption.

Because compreg swells so slowly, the old 24-hr. water-absorption test has little meaning. A new rapid equilibrium swelling and recovery test (developed by the U. S. Forest Products Laboratory) is being included in a new specification now in preparation. In this test, cross sections $^1/_8$ in. wide by the thickness of the panel and 2 in. long are measured in the thickness direction of the original panel, then soaked in water at 70° F. for 24 hr., and then again measured in the same direction. These thin sections come virtually to swelling plus recovery equilibrium in this period of time. Tests have shown that when the equilibrium swelling plus recovery does not exceed 12 percent increase in thickness, which is the newly specified maximum, the tendency for the particular impreg to washboard in service (exhibit uneven swelling plus recovery) without a surface finish is negligible. Most of the compreg now made in the United States will meet this specification, although the earlier material would not.

Compreg is relatively resistant to decay, termites and marine borers and it is more resistant to acids and mild alkaline solutions than wood, impreg or staypak. The flame resistance of compreg is also considerable and can be further improved by incorporating phosphate salts in the treating solutions.

A high degree of polish can be imparted to any cut surface of stabilized compreg by merely sanding the surface with fine sandpaper and then buffing it. This potential polish exists throughout the structure. All that is necessary to bring it out is to smooth the surface. This easy way of restoring the finish would be an advantageous property of compreg or compreg-faced furniture or flooring. The natural finish is highly resistant to such organic solvents as alcohol and acetone, which destroy most applied finishes.

Compreg has a higher coefficient of thermal expansion than normal wood, largely because of

its high degree of compression. The increase is mostly in the direction of compression and is generally about 50 percent. The increase in the thermal-expansion values can be calculated from the resin content and degree of compression.

The strength properties of compreg, with the exception of toughness and Izod impact, are increased about in proportion to its increase in specific gravity.

Compreg made with higher resin contents has greater compressive-strength values but lower tensile and Izod impact values. Many of the strength properties of compreg, such as the modulus of rupture and the modulus of elasticity in static bending and shear, are but slightly affected by manufacturing variables and degree of cure, whereas the water resistance properties continue to be improved with a more complete cure. The toughness and Izod impact values of compreg, however, vary considerably with variations in the manufacturing technique and curing time. For this reason, one of these two tests should be regularly made.

Compreg is from 10 to 20 times as hard as normal wood and is appreciably higher in abrasion resistance.

Specific strength properties of densified wood can be emphasized by varying the grain direction of the laminae. A fishing rod, for example, is produced with a parallel lamination for directional strength, while a forming die is produced with cross grain laminations to provide uniform strength in all directions.

Due to its increased hardness and the presence of resin, compreg is more difficult to machine than normal wood. In appreciable thicknesses, it should be cut with special saws such as those used for cuting brass or plastics. Machine speeds should in general be lower than for cutting normal wood. Compreg machines well and can be turned with greater precision than normal wood on a lathe using metal-working tools.

Compreg is more brittle than normal wood and most metals, although it is considerably tougher than the ordinary molding plastics. Because of its brittleness, objects made from it should have rounded fillets rather than sharp edges. This is true of threads cut in compreg.

Compreg can be glued to itself or to normal wood with both hot-press and room-temperature-setting, nonacidic resin glues. The compreg surfaces to be glued should be lightly sanded to remove the surface gloss before gluing, and when the panels are thick, these surfaces should be milled plane so as to assure perfect contact. Glue spreads of 15 to 27 lb. per 1,000 sq. ft. of single glue line should be applied. Gluing pressures should be adequate to get good contact, generally 150 to 250 p.s.i.

Some Applications

Because of its exceptional long wearing qualities, densified wood will be especially valuable in reducing maintenance costs and maintaining quality production. Molds for post-forming plastic laminates, for example, have been made of compreg since they have longer lasting qualities than ordinary wooden molds for extended production requirements.

These same wearing qualities have made compreg valuable in the production of turn tables for rubber extrusions. Turn tables previously made of conventional wood splintered and tore the rubber. The compreg turn tables have such smooth surfaces that production rejects have been greatly reduced.

Picker sticks of densified wood are now supplanting those made of conventional wood in the textile industry because of their superior stiffness and strength. These sticks as subjected to continuous abrastion. Service tests have shown that 600 sticks of densified wood can outlast 12,000 sticks of conventional wood with a saving in cost of 56 percent. In this particular application, production is accelerated because the use of compreg sticks reduced shutdown time. Formerly machinery had to be stopped for one hour to replace the conventional wood sticks.

New beauty has been brought into the most discriminating households with utility items fabricated from densified wood. Cutlery handles and sheaths to grace the dining table, with silent butler and cigarete tray tops that add new warmth to living room accessories, all posses a rich appearance and close-grained beauty that will not be marred by years of service. Smooth handles of this material are also being produced for other home items such as pot and roast stands.

The enviable combination of beauty and strength in densified wood has figured prominently in the production of fishing rods. The durability offered by these rods is evidenced by the many types of service for which they are made. Included are a utility boat and bridge rod, a bait-casting rod, a spinning rod, and light and heavy game rods. They possess the desired flexibility, are virtually impervious to water and weather, and are exceptionally strong, having a tensile strength of 30,000 pounds per square inch, and a flexural strength of 40,000 pounds per square inch.

Other applications now being evaluated for this material include parting boards for foundries and refractories, gymnasium flooring, marine decking, stair treads, doorsills, millwork, and bobbins and shuttles for textile equipment.

Densified wood is a challenge as well as an opportunity for the woodworking industry.

Wherever there is a need for beauty of grain and finish—or service qualities that defy abusive treatment — densified wood will provide a new, and perhaps the final answer.

Alarm Spreads Over Deadly White Oak Wilt

Little Rock, Ark. — United States Senator J. William Fulbright of Arkansas has requested the United States Forest Service to make an immediate study of the threat of a deadly blight to Arkansas oak timber, a major natural resource of the state. The new and threatening fungus started a few years ago in the upper midwest and has spread to Indiana and southern Missouri. Evidence of the blight have been seen within 20 miles of the Arkansas-Missouri line in the Ozarks, and experts fear that it may be the worst epidemic since that which virtually wiped out American chestnut trees 25 years ago. Arkansas, Texas, Louisiana and Mississippi are leading oak lumber producers, but so far none of these states has felt the new enemy's attack.

Members of the Memphis Lumbermens' Association, at a meeting two weeks ago, expressed alarm over the potential threat to one of their principal raw materials.

No known remedy for "oak wilt" which kills red oak trees quickly and white oak trees more slowly, has been found, state forestry experts said. Some of Arkansas's best oak stands are in the northern and northwest parts of the state, particularly in the Ozark National Forest.

A totalitarian state is one where everything is compulsory that is not forbidden.

MORE SAWING • LESS SHARPENING

● Atkins Segmental Smooth End Trimmer sawing face down veneered cabinet stock. Two saws operate at the same time. Second saw is to left of one shown.

ATKINS *Segmental* HIGH SPEED STEEL SMOOTH END TRIMMERS

To achieve greatly increased production with fewer sharpenings, Atkins introduced a highly successful *metal cutting* technique into the *woodworking* field. The results were even more spectacular than anticipated!

These genuine High Speed Steel Segments — properly toothed, hardened and tempered — slice quickly through green or dry, hard or soft wood. They are particularly effective in sawing veneer panels because they cut clean, without slivering. *They will not feather.* They are easily and quickly resharpened by grinding — Segments can be inexpensively replaced when necessary (which is very seldom). Available in saws with rated diameters from 11 to 30 inches.

Start now to cut your operating costs with Atkins Segmental High Speed Steel Smooth End Trimmers. See your Atkins Distributor or write for full information.

USERS report as much as 3 to 10 times the sawing between sharpenings — as compared to any saw previously used . . . on trimmers, variety tables, equalizers and similar equipment.

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FURNITURE MFG. STAGES SUBSTANTIAL RECOVERY IN RECENT MONTHS: SEIDMAN

Outlook Good for Early 1950

For the wood furniture industry, the outlook for the balance of 1949 and early 1950 remains favorable. Particularly significant is the continued improvement in the volume of residential building, as new homes generally mean new furniture. Moreover, the mist beclouding the country's economy attributable to the major strikes appears to be lifting. Increased outpouring of government money in the form of veterans insurance refunds, continuing defense expenditures, and support of agricultural prices are factors which will help maintain the level of consumer purchasing power—at least for the foreseeable future.

In addition, the inventory adjustment prevalent earlier in the year has apparently run its course. The effect of the overcautious buying policies already is being felt by many of the furniture dealers as consumer demand is approaching that of last year in the face of inadequate inventories.

During the war years, October was always better than September insofar as furniture factory orders are concerned. This, however, has not been the case since 1946, nor was it true in any prewar year since 1928. Thus, the drop in new orders for October 1949 was not unexpected. The decline was 14% and compares with a falling off in October 1948 of 9%. However, new business in October 1949 ran well ahead (15%) of that taken in the same month a year ago, with ⅔ of all reporting plants showing a gain. This increase had the effect of further narrowing the gap between total new business booked thus far in 1949 and in the similar ten-month period of 1948. This gap early in the year had amounted to as much as 33% and as late as July stood at 24%, while in October it was reduced to 16%.

October Continues Trend

Shipments again fell short of those made in the comparable month of 1948, this time by 10%. No month in 1949 has matched its comparable month in 1948 as to shipments, but the October record was the best of any month thus far. For the ten months ended October 31, shipments (dollar volume) were down 17% compared with the similar period in 1948. This, again, is the best cumulative showing for any month-end thus far in 1949. Cancellations were slightly less than normal, being only 5% of the amount of new orders booked in October.

Unfilled orders increased 1% during Ocober, the fourth successive month to show an increase. However, as compared with the end of October 1948, the backlog awaiting shipment was down 23%.

Dollar payrolls and the number of employees each increased 2% in October over September, but the two factors were down 11% and 7%, respectively, compared with October 1948. Plant time increased again in October from approximately 43 to an average of 43½ hours per week. This compares with 46 hours per week worked in October 1948.

Fine Outlook for Toy Industry

Based on the known pertinent facts it appears that the American toy industry has truly entered a golden era. The industry has achieved a position of world leadership in producing and selling toys. The potential market for toys in the United States presents an extremely favorable picture. The toy industry itself has attained a maturity and strength that makes further growth possible.

According to trade reports, 1948 was a peak year for the American toy industry with volume equaling or slightly exceeding 1947 value of manufacturers' shipments of $322,301,000. At the time of the American Toy Fair in March 1949, based on orders placed and requirements indicated by buyers at the fair, it was anticipated that 1949 would equal the high levels of 1948 and 1947. However, it appears now that in spite of a 3 percent gain in 1949 in number of children of toy age, the 1949 dollar volume of sales will be down from 1948 due to price decreases on many items, increased emphasis on low and medium priced merchandise, and the slight downward drift of disposable personal income. This dollar volume decrease from 1948 may amount to as much as 10 percent, but 1949 volume will still be well above prewar levels and the present outlook for the American toy industry continues to be bright.

Hardwood Inspectors School To Dedicate New Building

Memphis, Tenn.—The hardwood inspection school here of the National Hardwood Lumber Association will open its next session on February 15. Applications for entry are being received.

The new school building and workroom will be dedicated December 1. F. W. Hutcheson, Huntsville, Ontario, president of the National Association; Harry D. Gaines, St. Louis, chairman of the National's Advisory Committee; John W. McClure, Chicago, executive director of the national group and other officials are expected to attend.

The new building erected by the association for the school has been completed. It is on the grounds of Nickey Brothers, Inc.

New Booklet on Treated Lumber For Outside Purposes

St. Louis, Mo.—An illustrated 25-page booklet on the use of pentachlorophenol as a wood preservative on the farm is available from Monsanto Chemical Company.

The easy-to-read booklet gets down to dollars-and-cents examples of the advantage of treating wood with pentachlorophenol solutions. Properly used solutions of the chemical, commonly known as penta, are said to protect wood from attack by decay and wood-eating insects, increasing its service life several times.

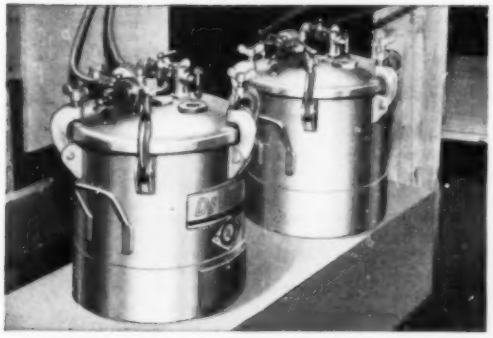
In addition to being economical, the booklet points out, penta-treated wood is clean, odorless and paintable. A brief history of the chemical's development, something of how it works and recommended methods of application are included.

Suggested uses on the farm range from garden stakes to barns and silos. Ready-to-use solutions and concentrates of penta are obtainable from farm supply and hardware stores, lumber yards, mail order houses and paint stores.

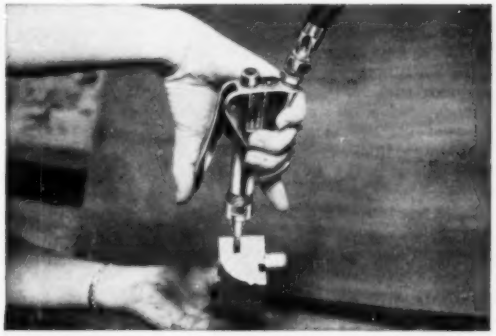
SPI Reinforced Plastics Division Plans Meeting

The Fifth Annual Technical Session and Exhibit of the Reinforced Plastics Division of The Society of The Plastics Industry, Inc., will be held in the Hotel Cleveland, Cleveland, Ohio, on January 10th, 11th and 12th, 1950. This meeting will emphasize the latest developments in the field of Reinforced Plastics, a steadily expanding branch of the Plastics Industry.

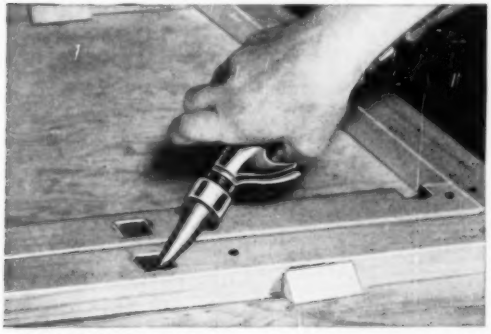
CLEAN, MODERN JOINT GLUING with the Flow Gun!



1. CLEANER – The cold glue mix is kept in one or two standard pressure tanks connected to an air line. From here it's piped directly to individual Flow Guns.

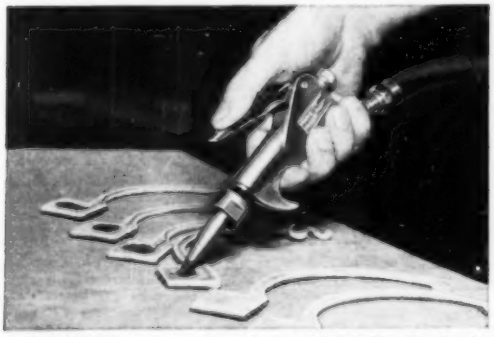


2. FASTER – No waste motion. No interruption for refills. Slight pressure on the handle controls flow of glue into hard-to-reach rabbets, etc.



3. MORE ECONOMICAL – No dripping. No waste. No clean-up. No heating. No maintenance of steam or electric pots. No brushes to replace. No "leftover" glue.

4. BETTER JOINTS – Puts glue where it's needed. For example, glue can be applied around *sides* of dowel hole only, allowing faster assembly, better joint, no squeeze-out.



5. SIMPLER – In operations shown, CASCO No. 959 Casein Glue is left in the equipment for *one week* without cleaning! Photos courtesy of Doernbecher Mfg. Co., Portland, Oregon.

Doernbecher put their assembly gluing on a modern production line basis soon after a CASCO man demonstrated this new Flow Gun. Other plants are quickly picking up the idea. Another reason why it pays to work with glue specialists who know the tricks of the trade.

Complete information on the Flow Gun is available on request.

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casein and resin glues.

EXPECT FIGURED WOODS, DARKER FINISHES IN CASE GOODS AT JANUARY FURNITURE SHOW

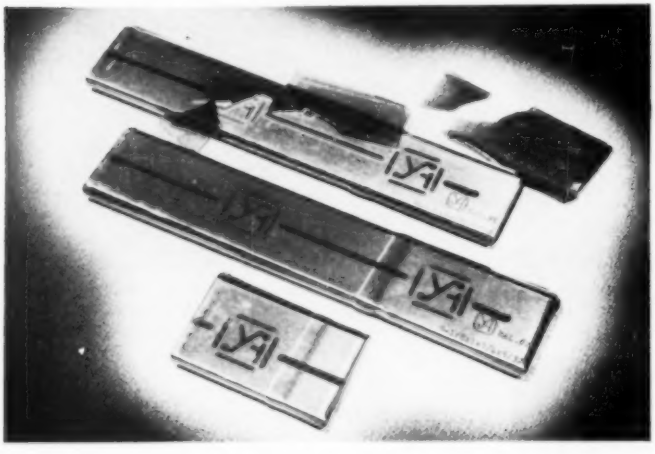
A galaxy of new styles, not just in occasional pieces but in complete correlated groupings, will put trends in italics when the Winter Homefurnishings Market opens at the American Furniture Mart, January 9.

Infringing on the use of flat-cut woods will be swirl and burl cuts of walnut, the swirl and crotch cuts of mahogany. Grain patterns will be accented by natural and darker finishes, rather than bleached tones. Some manufacturers will bring out dining room suites in bright colors, as well as limed ebony and cordovan mahogany. The use of cherry, particularly with antique finish, will be more popular, while fruitwood finishes will be apparent in the maple field. Satin, gold and black finishes will mark a still further return to beauty and elegence.

Traditional dining room tables will feature silver drawers and hidden compartments to serve modern living needs and to keep accessories out of Junior's reach. Watch for more oval-top tables as an answer for more seating in less space.

Nearly every occasional table and desk will be shown with leather tops hand-tooled in gold. Prominent accents will be ebony finish with gold trim and chinoiserie decoration, antique finishes and marble tops.

One case goods manufacturer will show a wardrobe which converts into a vanity, a desk and a cellarette. Several will introduce headboards with shelves for books, radios and magazines built around twin and King-sized beds.



Yates-American Announces New Packaging Practice

Yates-American Machine Company announces a new development in the packaging of knives, cutters and bits for shipment from Beloit. After being electrically etched with the Y-A trademark, size or symbol, and balance mark, the knives and cutters are dipped in a molten plastic, which upon cooling, completely covers them with a thin transparent coating. This coating makes an airtight, waterproof package which provides positive protection against rust, corrosion, or damage to the cutting edge.

When removed from the shipping carton or box, the knives or cutters can be stored indefinitely in the plastic packaging. Symbols or size markings are readily legible through the coating, which is not removed until the tools are to be used. The coating is then easily stripped off and discarded.

Dedicate New Building For Lumber Inspectors' School

Memphis, Tenn.—The new building of the National Hardwood Inspection Training School, located on property leased from Nickey Bros., Inc., was formally dedicated on Dec. 1. Frank W. Hutcheson, president of the association, who lives in Huntsville, Ontario, Canada, presided at the dedication.

Short talks were made by S. M. Nickey, Sr.; Armour C. Bowen, president of the Memphis Lumbermen's Club; L. C. Nicely, instructor and director of the school and assistant chief inspector of the association.

Among visiting lumbermen were Harry D. Gaines, who is vice president of the association. The Chicago headquarters of the association were represented by John W. McClure, executive officer and William H. Nelson, chief inspector.

In the evening a joint dinner and reception by the Memphis Lumbermen's Club and the National Hardwood Lumber Association was held in honor of the visiting lumbermen and the 47 students of the training school class now in session. These students are from all parts of the United States and Canada and five from European sources.

Texas Firm Busy Making Juvenile Furniture Line

Gladewater, Texas—Furniture manufacturing was featured in a full-page article in "The Gladewater Daily Mirror," November 13, 1949. There were 10 pictures showing various manufacturing processes in use at the plant of the Moore and Wiseman Furniture Manufacturing Company. The article stated:

The start of the Moore and Wiseman Furniture Manufacturing Company came about with an original idea, local labor, lots of hard work, and a little luck thrown in on the side.

Owned jointly by Sam A. Moore, E. W. Wiseman, and Everett Wiseman, the company specializes in producing quality furniture for the "little folks," of which they expect to make 20,000 units this year.

Besides juvenile furniture, the firm manufactures a line of dinette chairs, low rockers, sewing rockers, and vanity benches.

Native gum and oak lumber is bought near Gladewater for the furniture process. The firm has its own dry kiln where they cure their own wood. In a gas-fired brick room, moisture content of the wood is reduced to 16%.

Next operation after curing is planing the wood, and after that is done, the wood is run through the shaping section, consisting of lathes and band saws. After shaping, it is ready for sanding and finishing.

Lles Appointed Gen. Mgr.

Clarks, La.—Mayo M. Lles, who has been in the lumber business since 1920, has been named general manager of the Louisiana Central Lumber Company here by the firm's board of directors. He succeeds the late C. C. Sheppard as general manager. Lles has previously served as land agent, assistant general manager and assistant to the president of the Louisiana Central Lumber Company and the Louisiana Gas and Oil Company.

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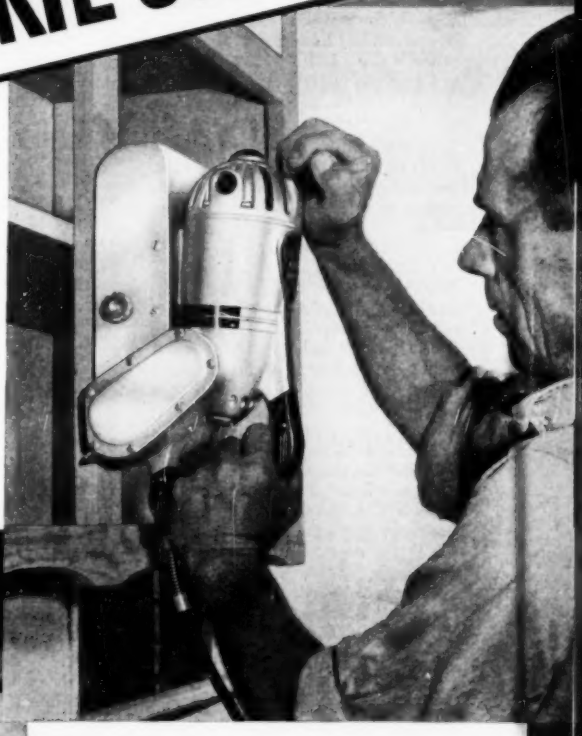

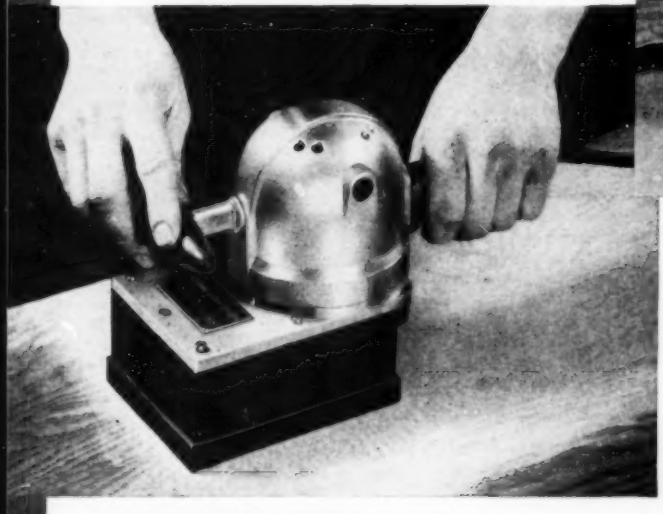

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SHAPER SHORTS

By **Paul H. Graham**

A QUICK TEST FOR WIDTHS OF OPEN KNIVES used at the shaper is to place the knives between the slotted collars and tighten down the nut by hand. By pulling each knife outward with the thumb and index finger, a good comparison can be made. If one slides out easier than the other, the knives are not a matched pair widthwise and should not be used together.

★

WHERE DIRECT-COLLAR WORK IS TO BE PERFORMED at the shaper, the work should be brought to the cutters on a tangent with the guiding collars.

★

THE SELECTIVE POINT FEED CONTROL on the automatic shaper permits the rate of feed (table feed) to be slowed down at any one or more points to accommodate a difficult shaping cut, or sharp rise or fall in a pattern.

★

A HOLD-DOWN USED AT THE SHAPER for the production of molding has a base casting bolted to the table and is supported by two vertical rods, one at each end, connected at the top by a bridge. These rods form a slide upon which the hold-down is vertically adjusted by means of a crankscrew bearing on the bridge. The wood hold-down shoe is supported directly in front of the shaper spindle by two spring steel bars and the amount of pressure is regulated by a few turns of the crankscrew.

★

WHEN STARTING A CUT on the shaper where the stock is run against the collar and shows a tendency to jump into the knives, work it without a pin in the top of the bed. Push the workpiece forward, allowing the stock to feed into the head gradually. This forward motion prevents the shaper knives from getting a grip on the wood sufficient to jerk it into the head. Don't push the stock across in front but push it directly away from you, thus making it easier to stop the travel of the hands and keeps them out of the knives.

★

MUCH POOR WORK at the shaper is due to wear on wooden patterns. Worn or broken corners on patterns make them turn out inferior or reject production. A good safeguard against wood pattern wear is to install pieces of hard fiber in the pattern at the points which are most subject to wear.

★

IF THE SHAPER HAS BEEN SPEEDED UP above its rated speed, larger collars and longer knives should be used to provide a larger cutting circle to compensate for the increase in speed and to insure smooth work.

★

MULTIPLE-WING CUTTER SHAVE MANY ADVANTAGES at the shaper instead of open knives clamped between slotted collars, such as more cutting edges, better retention of correct running balance and profile, and safety by prevention of knives flying out of the collars or slipping out of alignment.

★

THE SHEARING CUT IS MORE EFFICIENT at the shaper than the ordinary straight cut. While it is difficult to obtain a useful shearing cut with large cutters, but can be obtained with smaller cutters by giving the working face of the cutter a slight twist, relative to the shank.

★

THE FIVE GENERAL DIVISIONS of shaper work are:

1. Straight work—work is straight with reference to its length (straight molding, beveled edges, rabbeting).
2. Direct-collar work—work is run directly against one or both collars with sufficient stock bearing against the collar to prevent it from slipping into the knives.
3. Form and collar work—work which is mounted upon a form and the form's edge is run against one or both the collars.
4. Specially-guided work—Irregular and odd-shaped work requiring the combination of special forms and shaper setups.
5. Stationary or positional work—work is fastened flat on the table or held firmly in position above the spindle, and the knives are brought into action upon work by raising or lowering the running spindle.

Give Hints on Avoiding Decay In Outside Woodwork

Wood used for the outside finish material of buildings does not as a rule stand in great danger of decay, says the U. S. Department of Agriculture. However, some of the changes made in building practices in recent years tend to increase the chance for decay and make it wise to pay more attention to safeguards against it, according to Arthur F. Verrall, forest pathologist.

For example, omission of overhanging eaves and elimination of eaves troughs increases the exposure of wood siding to rainwater. Further, it is no longer as practicable as it used to be to get naturally durable wood. Sapwood, which lacks resistance to decay, must be used more freely. So, says Verrall, methods of taking precautions against decay should be considered carefully in modern buildings.

Badly stained lumber, he says, is a poor risk, since it sometimes contains the early stages of decay infection, which may revive and grow if water gets into the wood. Paint alone cannot be relied on to keep wood safely dry.

When sapwood is used for exterior trim and siding in most climates, the pathologists give the following advice for avoiding decay: Use sound, dry, bright lumber; provide overhanging roof and rain gutters to help keep rain off the walls; use only light weight "breathing" building papers under siding; put flashing around the windows and other openings and projections; and use preservative treatments for such parts as wooden exterior steps and porch floors and rails, where it is impractical to prevent rain seepage.

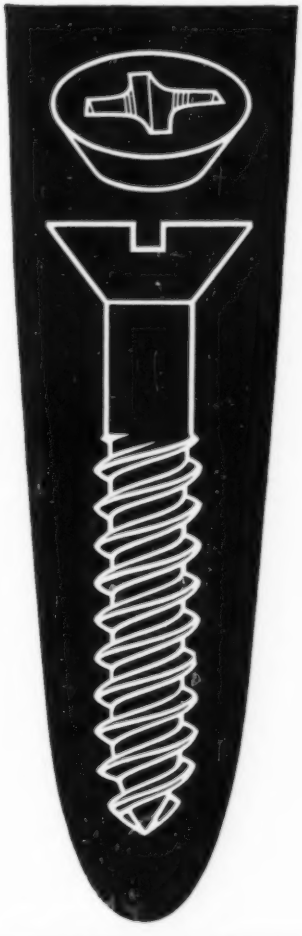
Fixture Designer Still Busy After 62 Years

Henry Tazelaar, dean of the American Seating Company's Architectural Woodworking Department, who celebrated his 62nd year of continuous service to the company in June, was congratulated on his birthday, October 30, by president of the company T. M. Taliaferro, in Grand Rapids, Mich. His age? Just as old as he feels. It was in 1888 that Tazelaar first began designing at his kerosene-lit drawing board in an old factory of the Grand Rapids School Furniture Company.

The plant was little more than a shanty, with a tar roof which splattered on Tazelaar's sketches in hot weather. A woodstove and community pail for drinking water comprised the comforts for the factory force of 50 members and the office staff of 6, who worked 10 hours daily, six days a week.

The Sweeperette, a carpet sweeper, was the company's principal product, along with bar fixtures and bank and courtroom furniture. In 1898 the Seating Company expanded and Tazelaar was transferred to the general offices, then located in Chicago. In 1929, when Architectural Woodworking was transferred to Grand Rapids, he returned to his home town.

Tazelaar still sits at a drawing board, and he has plans for a busy future with the company he has seen grow from 56 to 2000 employees and from a gas-lit shanty to an organization with branches throughout the United States.



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Assistant Chief Engineer, The Kirk and Blum Manufacturing Company, Cincinnati, Ohio

Today's highly competitive markets require the furniture manufacturers to explore and analyze every possible means to lower costs.

Many concerns are meeting this challenge by adopting a well-planned modernization program. Such a program may include the replacement of actual woodworking equipment in the Rough Mill or relocating the sanders in the finishing department. Nor does the task stop here. It is not unusual to find the boiler house under careful scrutiny, for it is here that refuse from the woodworking machines can be burned and reclaimed more efficiently in the form of power or heat value, with subsequent reduction in operating cost.

Logically then, the shavings and dust disposal system becomes prominent in this program and should be given careful consideration.

The modern, well engineered and designed shavings and dust disposal system is indeed a departure from the old type "Blower System" of years ago. Such systems of yesteryear were haphazardly installed with little or no thought being given to the well defined engineering principles governing such systems as we know and utilize them today. Rule of thumb was the order of that day, resulting in costly operation—perhaps far greater than realized.

Today, however, the shavings and dust disposal system is considered for its true worth, a real tool of production; a tool geared to serve faster operating woodworking machinery and to accomplish increased worked productivity through improved working conditions.

By the application of engineering knowledge and "know-how" this tool is able to serve you efficiently and well.

Let us consider a typical installation from the design procedure:

FIRST: Machine hoods are carefully designed, proportioned and applied to the equipment. The actual hood is of great importance, contributing its obvious part to the over-all efficiency of the whole system. Floor sweeps are strategically located to accomplish the most economical removal of floor refuse.

SECOND: Air velocity, volumes and pressures are computed, routing the branch and main piping with power economy in mind. The small diameter branch pipes should be kept as short as possible with the longer runs being made with larger pipe.

The frictional resistance to fluid flow is far greater in small pipes than in larger ones, at a given velocity, varying essentially as the square of velocity ratio.

The hood control velocity is established for each machine, with individual entry coefficients and corresponding losses expressed as a percentage of velocity pressure, occurring in the pipe leading from the hood.

Fitting and elbow losses are now carefully computed, using the "streamlined" type of junction with branches brought in at gradual angles, thereby reducing power—wasting turbulence to a minimum at these junctions.

The elbows are designed with throat radii of 1½ to 2 times the elbow diameter and are of one piece with triple ribbed thickness of seams extending around the periphrey, for durability and long life.

Next, the straight piping loss is computed and added to the component losses previously calculated, all in static pressure. Precisely at the fan inlet we convert static pressure to total pressure by algebraically adding the fan inlet velocity pressure as calculated from inlet area of the particular fan to be used.

We now have the intake side of the hypothetical system designed and know the static, velocity and total pressures at the fan inlet.

The discharge side of system is similarly calculated, totalling all losses including elbows, straight piping and loss incurred by the use of the centrifugal collector. We thus establish total pressure on the discharge side of the fan, precisely at the fan outlet.

The sum of the total pressure at the fan inlet plus the total pressure at the fan outlet represents the system total pressure at which the fan must work.

The static pressure of the fan is simply the fan total pressure diminished by the fan outlet velocity pressure.

Since the fan manufacturers have standardized their multirating tables and performance curves to the Joint Curves prepared by ASH&VE—NAFM and also ASME Code, accurate and satisfactory selection and application of the fan unit may thus be accurately accomplished.

The V-Belt short center drive of the fan has much in its favor, since accurate fan speeds may be obtained, bearing in mind that volume, pressure and horse power vary directly as the square and the cube of the speed ratio, respectively.

THIRD: We next consider the centrifugal collector, which usually is located directly above a suitable storage bin.

The collector in itself is an interesting engineering problem.

Although we know through research and experience that no design, geometric proportion, shape or size, type or kind of collector embodying the centrifugal principle is 100% efficient on recovered weight to escapement ratio great progress has been made in increased efficiency of centrifugal collectors in very recent years.

The modern high efficiency collector is designed on carefully controlled physical dimensions. Outlet diameter, cone and cylinder height, and cylinder diameter are all carefully computed; and they bear greatly on efficiency.

In addition to the progress that has been made in raising the operating efficiency of centrifugal collectors, it is now possible to regulate the air pressure at the dust outlet from positive to a neutral condition of no pressure. This is a very desirable condition when the collector discharges into a bin, inasmuch as it eliminates air pressure in the bin, which might otherwise result in pack-

*Prepared for presentation at the Virginia-Carolinas Section meeting of the Forest Products Research Society, Duke University, Durham, N. C., November 4, 1949.

(Continued from preceding page)

ing of materials.

The modern centrifugal collector entails a modest original investment for the purchaser and performs a difficult function with a minimum of maintenance, at astonishingly high efficiency.

FOURTH AND FINALLY: We investigate the method of waste use.

We assume in the hypothetical case that the collected material will be burned in the boiler for energy recovery in the form of heat and/or electrical energy.

Here again much progress has been made. In the past, the usual arrangement has been to drop the collected refuse in the boiler by gravity from collectors, with little regard for combustion efficiency, and only the most elementary automatic control.

Recently, however, a much more efficient means of burning the collected waste has been devised. Essentially, the arrangement is this: All material is deposited in a large storage bin. The refuse is removed from the bin by a mechanical conveyor, and fed to a fan which blows the material directly to the boiler fire box with the necessary air to support combustion. Since the materials are introduced at velocities greater than flame propagation, the refuse burns largely in suspension, with high B.T.U. recovery.

Control is accomplished through a variable speed drive on the refuse conveyor, the drive being controlled by the predetermined steam pressure required on the boiler. In other words, the boiler it set for "x" steam poundage consumption. The conveyor, therefore, actuated through steam pressure controls, delivers the proper amount of refuse to maintain delivery requirement at all times. Thus, the conveyor speed, automatically controlled by boiler load demand, varies directly with delivery requirements.

This method of burning has been investigated by the Battelle Memorial Institute, a large and well-known industrial and scientific research organization. Their report states in part:

"We believe that the combustion equipment—for suspension burning of wood waste is of sound design and represents an improvement over other methods widely employed for burning waste wood.

"Operation of the combustion equipment appears completely satisfactory if properly installed and adjusted. The automatic control feature simplifies boiler operation, and suspension burning permits smokeless operation with low excess air and, consequently, high boiler efficiency.

"Furnace refractory temperatures were moderate in all units observed. Refractory maintenance costs should not be increased appreciably when suspension burning equipment is installed."

In conclusion, it is prudent to consider the dust collecting and disposal in its true light; a tool of production; a tool that to be of real worth to over-all plant efficiency must do a real job of removal at the machines, collection of the refuse and efficient disposition of the collected refuse.

When a woman gets a run in her nylon stocking—made of coal, wood and rubber—she won't know whether it's a clinker, a splinter or a blowout.

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Foreign Woods

Origin, Use, Properties and Nomenclature

By **George N. Lamb**

WHITE CHUGLAM—Terminalia bialata
Castanospermum australe
Family

From the Andaman Islands, white chuglam is a timber of tremendous size, from 100 to 160 feet high and from 3 to 5 feet in diameter. It was imported sparingly into this country before World War II but no postwar imports have been recorded. In 1932 the Andaman Islands produced 3,000 to 4,000 tons of which 20% was classified as *Silver Graywood* and 80% as non-figured *White Chuglam*.

Normally the wood is a bright chrome yellow when freshly cut, aging to a grayish yellow. This is the so-called white chuglam. Selected logs have a false heartwood of a light nut brown to an olive brown color, often banded with darker streaks. This type is marketed as *Indian Silver Graywood* and is the kind that has been imported into this country.

It is coarse, fairly straight grained, but may show a loose, slanting ripple or fiddle-back figure. It finishes with a fine lustre. Sp.gr. approximately 0.58.

It will be welcomed as a "special" rather than as a staple when it again becomes available.

Other names:

Burma—*Lein* (probably Terminalia pyrifolia)

Andamans—*Black Chuglam* is Terminalia manii; *Limba* (trade name—*Korina*) is Terminalia superba.

BLACK BEAN
Castanosperum australe
Leguminosae (Pea) Family

In Australia and Tasmania, black bean is considered one of the finest of cabinet woods. The black bean tree is large and beautiful, reaching a height of 120 feet and a diameter of 48 inches. It derives its name not only from the dark color of the wood, but from the color of the fruit. This wood has been sent to England where it has been used for paneling, floors and woodwork in fine interiors. In this country its use has been confined to veneers.

The sapwood is pale straw yellow to dull grayish white. The heartwood varies from a reddish brown to a chocolate brown that often is a compromise between black walnut and English brown oak. Often the wood shows alternating light and dark areas. It is slightly greasy, so does not take glue too well and its mineral content tends to dull high-speed machinery. It compares with sugar maple in weight and hardness (Sp.gr. 0.66) but has pores somewhat larger than Mahogany. They appear lighter in color and are conspicuous when the wood is finished. It takes a high lustrous polish. Black bean is a very attractive veneer wood but it always will be of very minor importance in this country.

Other names:

Moreton Bay Chestnut

Beantree

Yuba (real Yuba is Eucalyptus obliqua)

NEW GUINEA WOOD
Dracontomelum magniferum
Anacardiaceae (Cashew) Family

This genus is found in the Philippines, Malaya, New Guinea and possibly in Java and Indo-China. The Philippine species, Dracontomelum dao, is known there as *Dao* but in this country is better known as *Paldao*. D. magniferum is found both in Malaya and in New Guinea but only in New Guinea is it of commercial value. Imports to this country, so far, have been only from New Guinea.

Before World War II, New Guinea Wood largely supplanted Orientalwood and Paldao when these woods became difficult to obtain. Superficially it would be difficult to distinguish New Guinea Wood from certain types of Orientalwood and Paldao, although Orientalwood is the most variable.

New Guinea Wood is soft to moderately hard and light to moderately light. Sp.gr. 0.54. The grain is deeply interlocking, texture moderately coarse and even. Typically the heartwood is light yellow-brown, often pinkish. Frequently there are dark brown or blackish bands that irregularly follow growth lines.

The return of New Guinea Wood for veneer will be welcomed when it is again available. The Australian government does not encourage its exportation at the present time.

Other names:

Trade name—*Guinea Walnut*

(*Continued on next page*)

Jewel Abrasives make sport of tough sanding jobs...
JEWEL GARNET ENDLESS BELTS WITH AP'S EXCLUSIVE VELVET JOINT, PUT A SUPER-SMOOTH FINISH ON FINE TENNIS RACKETS. JEWEL GARNET'S FAST CUTTING QUALITIES HAVE MADE IT A FAVORITE FOR WOODWORKING.
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PLYWOOD, NOW USED MORE THAN EVER BY THE BOATING INDUSTRY, CAN BE FINISHED FASTER, AT AMAZING SAVINGS, BY BONDEX GARNET FIBRE. THIS PRODUCTION-BOOSTING ABRASIVE FOR DRUM SANDERS LASTS UP TO 8 TIMES LONGER THAN ORDINARY GARNET.
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HAREWOOD

Acer pseudoplatanus Aceraceae (Maple) Family

While this series is essentially of imported tropical woods, it seems advisable to include harewood because of the confusion that exists in regard to it. Actually it is a species of maple. However, the leaves of the tree resemble those of the sycamore or plane tree; and, in England the wood is called *Sycamore*. It really is a "sycamore-leafed maple" just as the box-elder in this country is sometimes called the "ash-leafed maple."

Originally the tree probably came from western Asia but now is widely planted in western Europe. It has thrived particularly well in England where the undyed wood is called *Sycamore*, while the treated wood is called *English Harewood*.

The art of dying this wood a gray color has remained a well-kept secret. Efforts in this country and others to dye maple have never produced results that equal the gray harewood of England. Even so, harewood should not be used in show window backgrounds where it is exposed to strong light or direct sunlight. Under such conditions, in a very few years, the wood takes on a strong golden tinge.

The wood itself is quite similar to hard maple and the wood selected for dying frequently shows a fine ripple or fiddle-back figure. In fact, plain wood is seldom given this treatment. Sp.gr. 0.65.

English hardwood had a minor vogue in this country prior to World War II but only scattered shipments have arrived since then.

Other names:
France—*Fausse Platane, Grand Erable*
Germany—*Ehranbaum, Berg-Ahorn*
Other woods called Harewood:
Santo Domingo Harewood—*Zanthoxylum* (West Indian Satinwood)

Wm. Leicester Honored by Borden's for 25 Years Service

William F. Leicester, a leader in the development of the casein glue industry, has been honored for 25 years service with The Borden Company. Mr. Leicester, vice president of the concern's Chemical Division, and 14 others received diamond-set gold pins. Theodore G. Montague, president of Borden's, made the presentations to employees of the company's national executive offices at the annual Quarter Century Club banquet in the Hotel Astor, New York City, Tuesday (November 15th).

Of the group, three employees were honored for 40 years service.

Mr. Montague noted that Mr. Leicester, born and educated in England, was responsible for the development of urea-resin glue in the United States in 1937 by the Casein Company of America Division, as Borden's Chemical Division was then known.

Mr. Leicester joined the Casein Company in 1924 as sales manager. He became a vice president in 1939 and president in 1944. In 1946 he was made a vice president of the Borden Company.

Science Licking Dutch Elm Disease

New Haven—Efforts to save the shady elm from Dutch elm disease show promising results after two years of experimentation.

DDT applied with a mist blower eliminates the disease from 91 per cent of the trees, says Dr. George H. Plumb, entomologist at the Connecticut Agriculture Experiment Station.

The American elm has been seriously threatened by Dutch Elm disease and also by a disease which causes the leaves to fall and the roots to die.

Fox Brothers Offers New Bulletins

The Fox Brothers Manufacturing Company of St. Louis, specialists in custom-built millwork for more than 75 years, has made available the following attractive and informative bulletins:

Wood Fire Doors

Printed in color, this bulletin illustrates and describes Fox Brothers Protexol - Impregnated Wood Fire Doors before and after 60- and 90-minute fire tests. It contains charts that summarize test performance in detail. Construction details and special characteristics are presented clearly. The bulletin also describes the Protexol Process as applied to all lumber and millwork and outlines design and construction advantages of Fox-made Gate City Awning Windows.

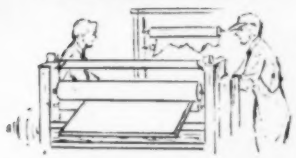
Custom-Built Millwork

This bulletin printed in color describes production facilities at the Fox plant and the methods employed in the volume manufacture of custom-built millwork. It also contains illustrations and detailed information on the Protexol-Impregnation Process carried out at the plant to make wood dimensionally stable and resistant to fire, rot and vermin. A special section explains construction and design features of Fox-made Gate City Awning Windows.

There bulletins may be obtained by writing Fox Brothers Manufacturing Co., 2705 Sidney St., St. Louis 4, Mo.

The right glue for the job

Plastic Top Laminators



For smooth strong, ever-lasting bonds use NCS No. 30 Casein Glue or NCS Powdered Urea Resin Glue.

ATTENTION!

National Casein's No. 30 Casein and NCS Powdered Resin Glues are preferred by plastic top laminators . . . also by house trailer manufacturers and by sash and door mills.

NCS No. 30 CASEIN GLUE far surpasses rigid Army-Navy and Federal government specifications for a strong, highly water-resistant casein glue. NCS No. 30 is easy to mix . . . a pleasure to use for inside or outside gluing. Withstands exposure and is impervious to extreme weather variations.

NCS POWDERED RESIN GLUE is preferred for its low water content . . . for its easy-working and fast-setting characteristics . . . for the fact that it is waterproof . . . and can be depended upon for positive everlasting bonds, regardless of extreme temperature and moisture variation.

Samples and suggestions without cost or obligation.

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Cedar Chests Meet "The Man on the Street"

Members of the National Cedar Chest Association met in New York recently through the medium of television. Dan Peterson, center with microphone, who conducts the "Man On The Street" program over WABD-TV, interviews Hampton Powell, President of the Association and Executive Vice President of Lane Company, and Clark Kelsey, Secretary of the Association, left, and Gordon Osborn, President of the Dillingham Manufacturing Company, and W. G. Raoul, Sales Manager of the Cavalier Corporation, right, look on. All of them participated in the broadcast.

Expect Good Buying at Furniture Show

Orders backed by sound business reasoning will characterize the International Home Furnishings Market in Chicago, January 9 to 20. This is the prediction of Wallace O. Ollman, general manager of the Merchandise Mart which houses the largest concentration of diversified home furnishings in the world.

"The economic outlook is bright, retailers need goods, and the home furnishings industry is on a solid footing after the readjustments of the past year," Mr. Ollman said. "Neither hesitancy nor speculation, but good solid buying should mark the January 1950 Market.

"Retail inventories generally are low and buying offices are advising their stores to buy in depth, so that the good business which is in prospect for the next several months will not be lost by lack of selections on hand.

"Furniture factories in the last months of 1949 have been 'up to their necks' in the effort to produce fast enough. Many case goods firms are sold up through January, others have backlogs as far as April. In mid-November it is practically impossible for a store to get occasional furniture or desks before Christmas. Upholstered furniture production, too, has been humming. The rush is, of course, due to the suddenly appreciated need and late orders of retailers all over the country.

"Raw materials and supply costs have risen in recent months and are likely to rise further from the effects of the new minimum wage law and company financed pensions. Already the increased costs have produced some price rises, notably in wool carpeting. There is probability of a rise in metals. Higher costs of domestic hardwoods, burlap, webbing, and some cover fabrics are stiffening furniture prices. The resultant higher production costs will be absorbed by some companies, unless they go too much further, while in other instances new merchandise will be somewhat higher at Market-time. Medium and low end furniture will be most affected.

"Supply shortages, too, have developed from the rush of late orders. One manufacturer reported difficulty in getting foam rubber deliveries, whereas he used to get delivery in 30 days. If the demand for television cabinets continues at its present rate, furniture manufacturers not only will get a lot of extra business, but veneer supply will tighten. Recently a furniture manufacturer received a single order from a TV maker for close to 10,000 cabinets. Much of such extra curricular business could create quite a backlog in the case goods industry.

"Quality of the new furniture is going to be better than ever, advance information indicates. Said one manufacturer, 'Cover fabrics are in greater selection, better styled, and have more "lushness" for the same price.' Interesting uses of woods and finishes will draw attention at the Market, with the employment of unusual figures, new finish tones and combinations of woods. More walnut and new treatments of walnut will appear. Additional cherry wood in both Provincial and Modern styles, new pine ensembles and such combinations as rosewood and mahogany will be presented," Mr. Ollman concluded.

FULL SIZE PATTERNS

of

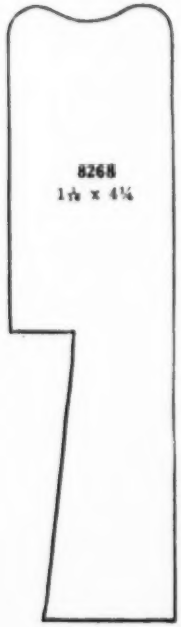
WOOD MOULDINGS

No. 5

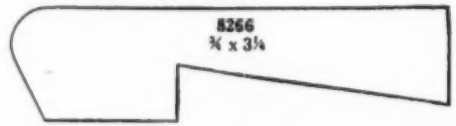
(See opposite page)

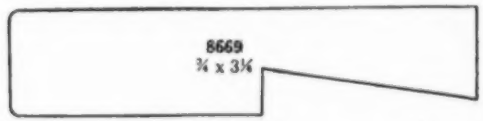
On the opposite page are shown a number of standard moulding patterns that are in wide use. It will be noted that they are printed in the exact sizes given on each pattern. This is done for the purpose of facilitating the ordering of mouldings, for the use of the knife grinding department and for those firms who may want to order ground knives or milled to pattern cutter heads from one of the several firms specializing in that type of work.

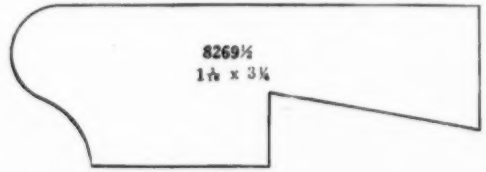
SQUARE MEMBERS, CASING and BASE

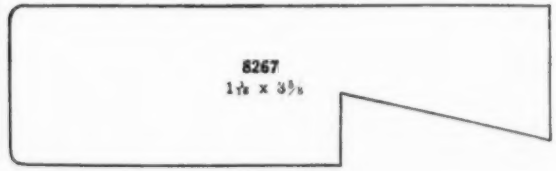


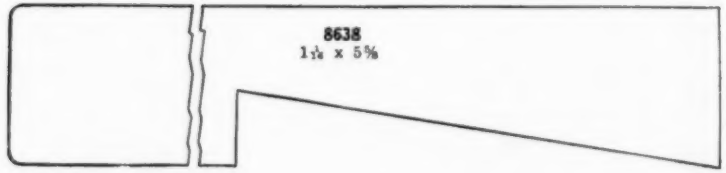
WINDOW STOOLS

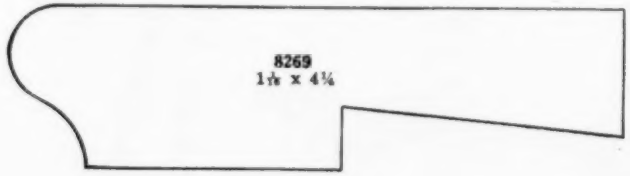












PANEL STRIPS

These actual size profiles will aid you in knife grinding or in ordering knives and cutter heads or mouldings.

LIGHTING IN WOOD PLANTS

Jack Dunman

Director of Safety, The Mengel Co., Louisville, Kentucky

In visiting saw mills, veneer and plywood mills, furniture factories, and other wood working plants, I am amazed at the lack of good illumination.

We often go into plants and find men operating saws, shapers, and other high speed woodworking machinery in twilight or blinding glare.

A few days ago I visited a plant where sunlight streamed from a skylight onto the top of a shaper, causing a reflected glare that made it almost impossible for the operator to see his work. I often wonder why woodworking firms allow such things as poor color, poor finishing, and poor machine work due to the lack of proper lighting facilities.

I realize more than anyone that it is impossible for all of us to go so far as to place in service the new three dimensional lighting. Several things can be done, however, that will make your present lighting system more efficient and less fatiguing for your operators. Following is a check list for better lighting, some things that can improve your own system:

1. Are reflectors cleaned regularly? Dirty lamps and reflectors may shut off 50 per cent of the available light.

2. Are there overhead lights without reflectors? Bare lamps waste useful light and cause glare.

3. Are there lights on machines or at benches which should be shielded? Unshielded lights at or near eye level cause glare and seeing fatigue.

4. Are any lights placed so that the worker's shadow is on his work? Relocating light or increasing the number of light sources decreases shadows.

5. Is there reflected glare from shiny machinery surfaces or highly polished machine parts? A flat machine paint reduces reflected glare. Reflected glare on bench work is best controlled by placing light sources behind the workman.

6. Are lights in storage areas and on stairways in working order?

7. Are walls and ceilings kept clean? Clean walls and ceilings help to get the greatest return from your lighting system.

8. Is color used for identification Systems of color identification on pipes, aisle marks, levers, guards, trucks, conveyors, columns, stairs doors obstructions, will promote safety, prevent errors.

A complete lighting survey requires the services of a competent illuminating engineer. However, a portable photoelectric illumination meter will indicate general illumination levels in your plant. To make an appraisal of the adequacy of your plant lighting systems, you can compare these data with recommended "good practice" values adopted by the Society of Illuminating Engineers.

—*"Wood Products Safety."*

Husband answering telephone: "I don't know. Call the Weather Bureau."

Pretty young wife: "Who was that?"

Husband: "Some sailor, I guess. Wanted to know if the coast was clear."

TWO KEY MACHINES...
Mattison No. Two-O-Two Fast-Feed, Straight-Line Ripper
For Accurate, Fast Production
Key operations are the foundation for work that follows; and not only is it necessary to have fast production, but also accurate results. With the Mattison Two-O-Two Ripper and Mattison Moulder you get both. Work comes through uniformly accurate insuring proper fitting of all parts and giving your products that look of quality that comes from precise fabrication methods. Fast production, fewer rejects and less waste provides lower production costs and helps considerably to keep the price of your finished product down.
Mattison No. 276 Electric Moulder
ASK US TO SEND YOU COMPLETE INFORMATION
It will pay you to get all the facts on these two key machines.
MATTISON MACHINE WORKS
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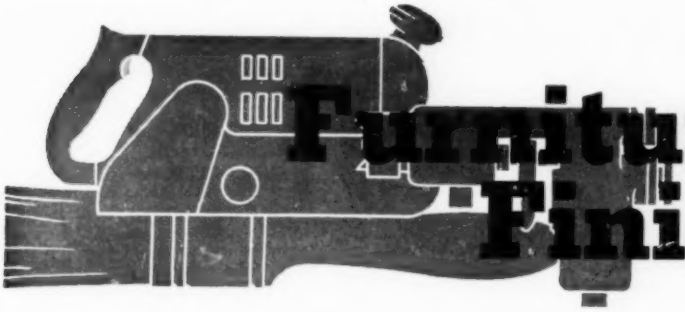


Furniture Finishing

A POSTWAR SLANT ON

Current Practice

IN WOOD FINISHING*

By

Paul S. Kennedy

Vice President, Finishes Division, Interchemical Corp., Newark, N. J.

The postwar period has witnessed much activity and growing interest in the finishing of wood.

This has been due to several factors:

1. The ever present objectives of greater speed and reduced cost.
2. The desire for better and more resistant finishes.
3. Increasing recognition that ultimate cost, rather than package cost, should be the yardstick of value for finishing products.
4. The vital need for a quick and consistent method for anticipating the check-resistance of lacquer films, in particular.

*Contributed by the Wood Industries Division for presentation at the Wood Industries Division Meeting, Jamestown, N. Y., September 27, 1949, of the American Society of Mechanical Engineers.

This trend has been accentuated by unusual circumstances.

Greater Speed and Reduced Cost

In line with general experience, this period has included a seller's market, together with radical increases in labor cost. Accordingly, aims have been to produce finished units rapidly, plus all possible economies.

Probably the sorest spot in wood finishing materials is the filler which must be applied on open-grain woods—and intensive activity has been directed to a cure. In the prewar period filler was generally regarded as a necessary evil, as well as a staple product to be purchased at a staple price. It was relatively slow drying—but in addition, subsequent performance was unpredictable—particularly with lacquer finishes. Various deviltries developed periodically, the most poignant of which were the so-called "graying of pores" and an unsightly "muddying"—usually in sections—of what should properly be a uniformly clear transparent film effect.

One of the most constructive results of this postwar experience has been the growing appreciation by the consumer that the established practices of buying filler "at a price" could be shortsighted. When one of these epidemics of graying of pores, or muddying of films was encountered, the corrective labor expense invariably produced a staggering ultimate price tag. Sufficient consumers adopted this line of reasoning to encourage the finish manufacturer, for the first time, to spend time and money on the development of filler, with the assurance that a successful effort would receive a just return.

New Filler Development

A receptive attitude was also created towards tolerance of

change in long standing shop practice for the handling and application of filler. For instance, a new filler development, because it had to be handled faster, might require two men to wipe off a large unit, rather than one man. Actual man hours would be the same, however. Again, a new filler development might not suspend as well after reducing for use, and thus require an occasional stirring which would not have been necessary with the older type.

Thus fillers have come into use, employing various synthetic vehicles—as contrasted with the long accepted linseed oil vehicle —and drying time, not only shortened to periods such as an hour, but also giving better clarity—which is another way of saying "proof against pore graying and muddied films." The ultimate in this direction has been achieved with the stain filler combinations, employing fast to light dyes. The best of these products not only give "tops" in clarity; but they are absolute proof against pore graying. The explanation for this is that the translucent inert pigments, used in the filler, are themselves actually dyed. They, therefore, do not "dry out" or "wash out" to an unsightly pore condition.

Particularly in fast production —such as radio cabinets—operators, who have been open-minded in adjusting labor practice to conform with the product, have been able to effect important economies; by the elimination of both material and labor costs. For example, a good quality finish, employing stain and filler separately, first calls for the material and operation of applying a coat of stain. Next, a sealer wash coat of either lacquer or shellac of low solids content. Followed by a scuff-sanding operation. The purpose of this is to seal the pores so that when the filler is subsequently applied some of its vehicle is not sucked away by stray capillaries in the wood, robbing the full strength of the filler, as well as giving "smeary" pore effects at such points.

With stain filler combination, all of this is combined into a single operation with a single product. But while, from this point on, the application of the top coats would be identical, the danger of graying still exists with the simple filler. Sometimes, precaution is taken against this by formulating so that the filler is tinted with so-called oil soluble anilines. When the top coat material is applied, these anilines "bleed" and in so doing stain the inert pigment. The objection to this is that it is a temporary measure; as these colors are not fast to light and may subsequently provide embarrassment. Another method of guarding against graying is the application of a shading stain over the filler while this tends to color over potential gray pores, it is at some sacrifice of finish clarity, plus being an additional operation.

In all frankness, it must be admitted that these so-called fast fillers and stain filler combinations, are not as foolproof as the old fashioned filler for wiping and cleaning up; nor for packing the pores quite as full. But the good ones do a most acceptable job, as the mechanic gets the hang of them, and supplemented by the continuing laboratory work of the maker, further improvement and refinement is being progressively achieved.

The best of these synthetic type of fillers do not "heave" like the old fashioned filler. This is temporary "lifting" from the pores, which occurs when top coat material is freshly applied, and gives the illusion of a most flushly filled job. Unfortunately, there is a subsequent collapsing which shows up as "shrinkage". The best of synthetic fillers frequently look "hungry" by comparison because they are not so affected by freshly applied top coat, with the pore filling remained fixed. With the continued support and cooperation of the user, the future outlook for filler is most promising.

Another angle of reduced cost applies most specifically to lacquer jobs. From the standpoint of speed, saving of floor space and fast and easy touch-up and repair, lacquer is the ideal finish for wood. But it does have the shortcoming of what might be termed low solids or film thickness.

Solids in Lacquer

There is a definite limit to the amount of solids which can be incorporated in lacquer and still maintain a suitable spraying viscosity. Roughly speaking, varnish will have twice the solids or double the film thickness of a lacquer coat. Much work has recently been done to improve this deficiency in lacquer; and along two lines. One by increasing the solids content of the lacquer; and the other, by hot spray application. While both of these measures have proven effective, from the standpoint of giving possibly a 50% increase in film thickness over what is regarded as normal (a 21% lacquer) sufficient resistance and objection has developed to prevent general adoption.

A resultant trend has been to secure the desired film thickness by means of synthetic coatings—of which alkyd-urea base compositions would be typical — and these are currently finding some usage. The cure of these coatings is activated by means of catalyst, and while some are available in air dry form, most of them require stimulation by heat. The average temperature ranges employed are between 130 and 135 degrees F, as there is a pronounced feeling that in exceeding that maximum temperature vagaries of wood and glue are apt to cause complications. However, on some current government furniture work, specifications call for 150 degrees F.

Best and surest satisfaction is secured by adding the catalyst to the coating just prior to the time of use; although some of the products are supplied with catalyst added. In this connection, there is always a question of package stability, and potential difficulty exists if the user does not have a rigidly enforced system of first using up the oldest finishing material on hand.

Investigation by finishing manufacturers is currently underway with various kinds of synthetics and further developments can be confidently expected with synthetic clear coatings.

Better and More Resistant Finishes

The advent of these synthetic finishes, besides affording savings because of heavier film thickness, introduces varying degrees of resistance, which are highly interesting from the sales and service angle. When cured, many of them have outstanding resistance to alcohol and many other materials which affect lacquer and ordinary varnish films.

The maximum properties in these finishes are secured when the work is topcoated entirely with these coatings. But for vari-

ous shop reasons there is quite a general trend towards using an undercoat of lacquer type sealer, followed by a top coat of the synthetic. Importantly involved in this is the economy in sanding and the avoidance of possible "shelving" of coats of the synthetic itself when the cure of the undercoat has been carried too far to permit of proper knitting between the coats.

Here again, however, this is a matter amenable to ready control in a well regulated finishing room; because it is possible to get satisfactory sanding on undercoats of synthetic, and to provide against too complete curing of undercoats.

Ultimate Cost vs. Package Cost

There has been a decided and significant increase in the application of accounting practice in wood finishing departments to more careful and detailed segregation of costs. In these instances the package or container cost of finishing products is no longer the prime consideration, and many revealing instances have occurred as the result of team work between the purchasing agent and the finishing superintendent.

Actual mileage is not necessarily the most important factor. Hospitalization—or touch-up and repair—is frequently the most potent figure. Accessories, such as sandpaper, cost real money these days; but are too often taken for granted, rather than investigated from the angle of whether much less would be used with another finishing product. Savings in sanding, rubbing and polishing time all add up to the careful scrutiny which is being given, more and more, and the net importance of which cannot be over-emphasized.

The Properties and Uses of WESTERN RED CEDAR LUMBER*

The Western red cedar is among the largest and finest of the cedars grown anywhere in the world, its heartwood being famed for extraordinary resistance to decay. This tree is one of the foremost species of the Pacific Northwest forests, and reaches its peak development in the moister regions of Oregon and Washington.

Western red cedar is a distinct species, possessing virtually all the desirable qualities of the other cedars, and additional advantages besides. Its wood is of exceptionally light weight—one of the lightest of all commercial species—of soft texture and close, even, straight grain. It is very easily worked, can be finished to a smooth, silky surface with little effort, is free from pitch, takes and holds stains, paints and enamels excellently, and has superior gluing qualities. Its coloring is particularly attractive, varying from the almost pure white of the narrow sapwood to the light straw shade or dark reddish-brown of the heartwood.

The wood contains a natural preservative oil which renders its heartwood virtually immune to decay and gives it extreme durability without artificial preservative treatment. Painting cedar to preserve it is unnecessary since it does not deteriorate appreciably even under severe climatic conditions. When left in its natural state, it weathers to a beautiful soft driftwood gray.

Western red cedar is a wood particularly adapted for home building. It is highly regarded for all exterior uses. For interior purposes its beautiful grain, varied color, smooth surface, freedom from pitch and the attractive figures of its flat grain finish, will add charm to any room. This lumber may be left in its natural finish or stained, bleached or painted in any shade, tone or color desired.

Bungalow and bevel siding of this wood is very extensively used. It is sold in every state in the Union, its desirability being traced to such characteristics as freedom from pitch, unusual insulating properties, extreme durability and paintability. It is justly celebrated among owners of both large and small homes and among architects, dealers, contractors and carpenters, and is regarded as the Nation's No. 1 siding material.

Western red cedar also has a similar appeal to the informed user of mouldings, lattice, pickets, frames, and screen, storm door and window stock. Another item which is becoming increasingly popular is knotty cedar worked to panel stock—usually run with tongue and groove. This may be applied either horizontally or vertically, and is used both outside and in.

Where a combination of greater durability and ample strength are requisites the construction grades of Western red cedar are regularly used as framing lumber. Most of the "clear type" characteristics—its freedom from splitting and warping, its ease of working and nailing, its insulating properties and light weight—are equally effective in the construction grades. The combination of these characteristics, plus its ample strength for general construction purposes, recommend it for use as boards, dimension, plank and posts. Of particular value for economical construction are No. 2 and No. 3 Western red cedar boards.

Service records for this species, where used in damp places as is often the case with mud sills, barn boards, tanks, feed platforms and troughs constantly exposed to changing wet and dry conditions, supply abundant proof of its extreme serviceability in general construction work.

The splendid insulating qualities of this lumber when used for sheathing, siding, sub-flooring, roof boards or shingled roof, help to keep the home cool in summer and warm in winter. The wood's soft texture and light weight make it easy to work, handle and install, insuring minimum labor costs. It can be easily nailed and has good nail-holding power. It fits smoothly and because of its very low shrinkage ratio the joints stay tight.

Western red cedar also meets the stringent requirements of lawn or garden furniture and equipment, as well as of pergolas, lattice inclosures, fences, gates and similar structures. It is a preferred wood for greenhouses, hot-beds and all kinds of nursery equipment because of its demonstrated ability to resist the most punishing decay-producing conditions.

The list of uses to which this species is eminently suited is very

**The material for this article is presented through the courtesy of the West Coast Lumbermen's Association.*

nearly endless. On farms it is sought after, in addition to the home building purposes already mentioned, for barn construction, sills, battens, feed and water troughs, and like uses in which its durability particularly adapts it to the farmer's needs.

It is valuable for silo doors, gutter, irrigation flumes, stop gates, boxes, and light portable sluices, as well as for fence posts, well-curbing and beehives. It is excellent as insulating roof planking and as plank flooring.

This lumber is recognized as the world's premier wood for boat building, and large quantities are used annually for this purpose as well as for floats and other marine structures. It has gained national recognition as the material selected and continuously used for several generations of college and professional rowing men the country over. It is extensively used in all types of pleasure craft from the skiff to the large cruiser.

It is a first rate industrial wood, and because of its light weight and workability is distinctly desirable for luggage stock, toy manufacture, and core stock, as well as for boxes and crates.

Western red cedar mills carry in stock many standard sizes and items of lumber for prompt shipment to the yard and factory trade. However, the cedar manufacturers are glad to confer with wood-using plants regarding their specific needs in order to produce the exact sizes, dimensions and grades of lumber or cuttings the buyers require.

See Heavy Purchase of Machine Tools in 1950

A national survey of projected 1950 purchases of new machine tools, accessories and materials handling equipment just completed by the American Society of Tool Engineers reveals that, of the companies reporting, 80% state that they plan to buy either more equipment or the same amount as in 1948.

Conducted in connection with plans for the technical society's Industrial Cost Cutting Exposition in Philadelphia next April, the study was carried on through questionnaires addressed to members of the Society—representing a high proportion of industry in the United States.

The returns indicate a number of interesting trends, including the following:

45% will buy more than in 1948
35% will buy about the same amount
7% will buy "less"
13% will buy "very little"

Of particular interest are the reasons given for these planned capital expenditures:

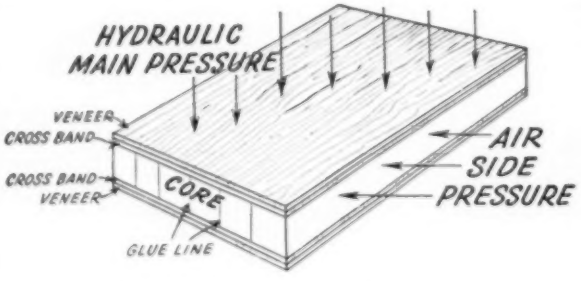
All Companies—

New machines to reduce costs —64%
Modernizing of present equipment—64%
Replacement of equipment—54%
New materials handling equipment—27%

Tom: "My wife talks to herself."

Tim: "So does mine, but she doesn't realize it—she thinks I'm listening."

Wood Products readers are the best informed plant operating executives in the industry.



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"VB" method for laminating plastic table and counter tops using progressive gluing. One minute curing time and the most uniform surface.

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With automatic timer and automatic side clamping attachment.
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Now . . .
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ALL IN ONE OPERATION!

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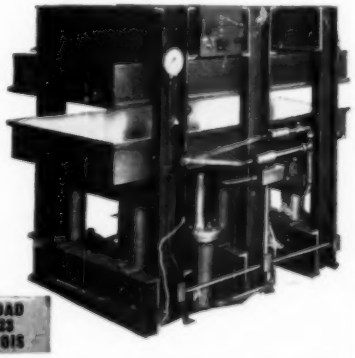
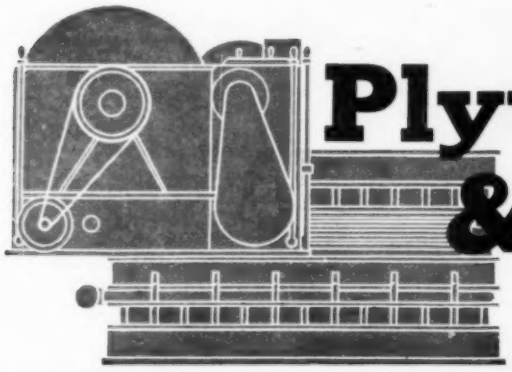


V. BERTHELSEN ENGINEERING WORKS INC. LOCKPORT ROAD P.O. BOX 1423 JOLIET, ILLINOIS



Plywood & Veneer

FABRICATION
APPLICATION

VENEER MEASURING AND STORING

By
Thomas D. Perry

Much has been written and published about the character and attractiveness of veneer and of its capacity to express beauty when properly matched and laid. Some of the intermediate steps in handling and distributing the self same veneer, while they may appear to be of minor importance, are really essential factors in attaining the end results of artistic and attractive plywood, and deserve equal publicity and understanding. No matter how well the veneer is selected and cut, unless it is properly handled, much of its quality may be sacrificed by clumsy procedure.

Veneer cutters, who have designed and built new plants within the last few years, have had an opportunity to make many improvements in handling. One of these companies, Chester B. Stem, Inc., of New Albany, Indiana, was formerly located in the old Pickerel plant on the banks of the Ohio river, where each major flood of the unpredictable Ohio, more or less inundated the whole plant and caused untold losses. This original plant, later acquired by Pickerel, was built by John N. Roberts, and was located near the river because of the facility with which logs could be shipped in by barge or floated in. As the trend developed toward shipping logs by rail, and as the flood losses mounted, this early advantage of river bank location became a distinct liability. In the mid 1940's "Chet" Stem abandoned the river bank site and built a new factory well away from the river. This new plant gave him an opportunity to develop the "last word in cutting and handling veneer by modern methods. An exterior view of this new plant is shown in Fig. 1. It is a noteworthy plant, with every up-to-date facility that an ingenious Hoosier could devise. No capital outlay was spared to improve veneer quality and to decrease operating expenses, both of which were passed on to the consumer.

The interior of the offices is a

Fig. 1.—Modern Veneer Factory of Chester B. Stem, Inc.

marvelous exhibit of hardwood plywood paneling, plain and figured, including a wide variety of wood species, types of figure and methods of matching. It is just what the office and show room walls of a veneer manufacturer ought to be, but seldom are. The natural and artificial lighting of the show room is ideal, to bring out the contrasts in color and figure. This paneling carries the graphic and convincing answer to almost every problem in veneer utilization.

Electric Measuring

It is a well established procedure to measure veneer, sheet by sheet, after drying and before packaging, and to select and mark typical samples somewhat as follows:

256-A.....Log and flitch number
1/3, 2/3, or 3/3. Location of samples used (3 samples)
1,150.....Scale in square feet or area

Samples are usually selected (1) near the top; (2) near the center at some significant point; and (3) near the bottom. Conditions may require a lesser or larger number of samples to properly describe the flitch. The crates of veneer are similary tagged for identification.

It has been the common practice, for many years, to station a scaler with a 50 foot cloth tape near the center of the flitch during its final inspection; to accumulate 50 feet of width by finger holds on the tape; to tally the 50 feet; and to proceed similarly until the entire flitch has been measured. Not only was this method time consuming, requiring three men, but the hazard of damaging or breaking the veneer, as each sheet was lifted and turned, was likely to be costly.

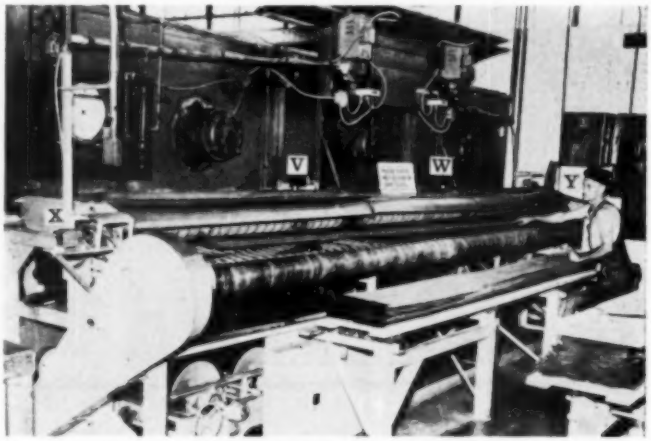
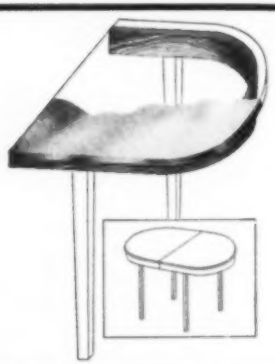


Fig. 2.—Electric Eye Measuring Device on Veneer Drier. V, W, eye pieces. X, Y, width registers

The modern "electric eye" has revolutionized many factory operations, and was most ingeniously adapted to the measurement of veneer, entirely eliminating the crew of three men mentioned above. The arrangement of this measuring mechanism, at the outlet end of the veneer drier, is shown in Fig. 2. The "eye" pieces are located directly under V and W, with a field extending to opposite poles, below the level of the veneer layer as it comes out on the drier conveyor chain. When a sheet of veneer moves under the eye, the light ray is interrupted; the magnetic clutch is activated and the counters X and Y register the exact width of the veneer sheet, until the tail edge passes beyond the range of the eye when the clutch releases. The eyes are so located, about five feet apart, as to serve any length from 6 to 16 feet. Each electronic measuring device, V-X and W-Y, is a complete registering unit and either will give a correct tally. When both registers are operating, the totals of the two units are averaged, and the result is accurate, even on tapering flitches, to a few thousandths of one percent. The offbearer at the drier, shown in the photo, is also the inspector and selects and lays out the sample sheets, which constitute the swatch for selling purposes. The measured veneer is piled on the crate base at the drier, and the crate cover follows as soon as the flitch is complete.

After drying and measuring, each flitch of veneer moves on cross rollers to the crating sta-



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tion. It is allowed to cool and temper for an hour or more before crating, since the pressing and crating of hot veneer will sometimes develop and emphasize slight waves and irregularities that might impair its usefulness.

Mechanical Crating

The flitch of veneer, dried, measured, sampled and normalized, moves from the cross wise to an end wise conveyor, which carries it under the horizontal pressure bar, as shown in Fig. 3. The subsequent flitches, still normalizing on the cross conveyors, can be seen dimly in the background. The pressure, near the point of strapping or banding, is exerted by a yoke that moves downward as indicated. The coil spring in the center of the photo, lifts the yoke free from the flitch, as soon as pressure is released after strapping, and allows the partly strapped flitch to move forward, on the conveyor chain, to the next strapping station.

This method of banding under standard pressure produces a tighter package, than the earlier and clumsier method of squeezing down and nailing the top of the crate. Such a tighter package mechanically pressed, is more likely to make the trip to the consumer undamaged; is less likely to change in moisture content during shipping and storage; keeps the top and bottom of the crate reasonably parallel; and permits storing crates on end without hazard of shifting be-

Fig. 3.—Pressure Bar for Strapping or Banding Crates.

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Fig. 4.—Crates of Comb Grain Oak en route to storage warehouse.

tween the veneer layers. If the crates are to have wooden sides, the same pressure device will hold the top down during the side nailing.

Vertical Storage Racks

After the crate has been tightened and fastened together by either of these methods, it moves by conveyor to the stock room, where it is picked up by an electric hoist. This hoist carries it to the desired location and upends it in the rack. A pile of strapped veneer crates, ready for the stock room, is shown in Fig. 4. An identification tag, with full flitch description, is shown attached to each crate in the photo.

The vertical storage racks, in the Stem warehouse, are a marked departure from the convential, where crates were piled up flat, more or less indiscriminatingly, or laid horizontally on shelf brackets, either of which required much hunting and handling to get at the individual crates wanted.

Vertical storage racks were provided, built simply and rigidly of timber, as shown in Fig. 5. Access aisles were provided between racks, wide enough to place or remove crates by power hoists, there being upended crates on each side of the aisles. Lists of rack contents were tacked to the posts on the side of the main aisle and at the end of each access aisle. These were corrected with every crate moved, and kept up to date as a record of crate location.

The upper section of the warehouse, about 20 feet from the

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floor was equipped with ways or tracks in both directions, for overhead electric hoists, which could serve any rack in the room with equal facility. A pair of swivel tongs made it easy to pick up or deposit any crate anywhere. If the tongs were at the approximate center of gravity of the crate, it could be tilted, swung or maneuvered with a maximum of convenience and minimum of labor. A view of the main aisle of the warehouse, of the hoist, and of the overhead ways is shown in Fig. 6. A series of control buttons, on a drop cord from the hoist, (noted in front of the operator), permits moving the hoist in any direction, by the mere pressure of the thumb.

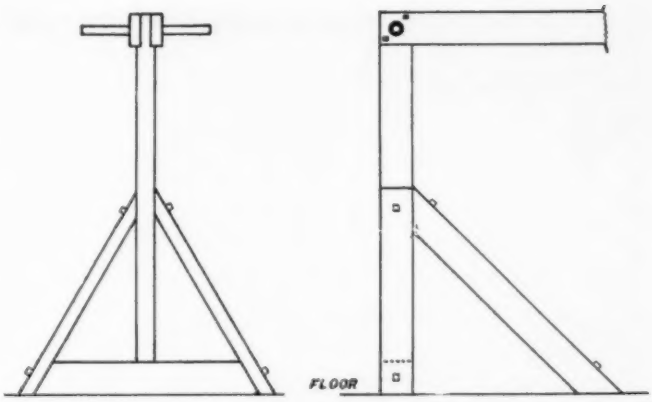

Fig. 5.—Sketch of Timber Rack for Storing Crates Vertically.

From Rack to Truck

The crate handling job is only half done when the crate is placed in the storage rack and duly recorded. When a selection of flitches is sold by sample, the samples are left with the customer for verification and subsequently are used by the customer to plan his work, as to which flitches shall be used on any given order. The list of flitches sold comes to the warehouse and each crate is located and picked up by the overhead hoist, shown in Fig. 6, and dropped on a factory truck in the main aisle of the warehouse. These factory truck loads of crated veneer are rolled to and assembled at the shipping platform, to which the highway trucks or truck trailers are backed up for loading.

A very interesting and efficient device has been developed by Stem, to move each crate from the factory truck to the highway truck, and is shown in Fig. 7. This crane is an integral unit, suspended from rollers which operate on the lower flanges of a series of "I" beams (A-AA), hung

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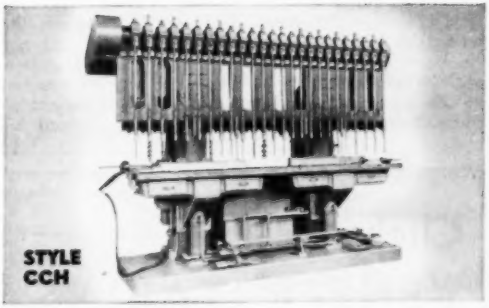

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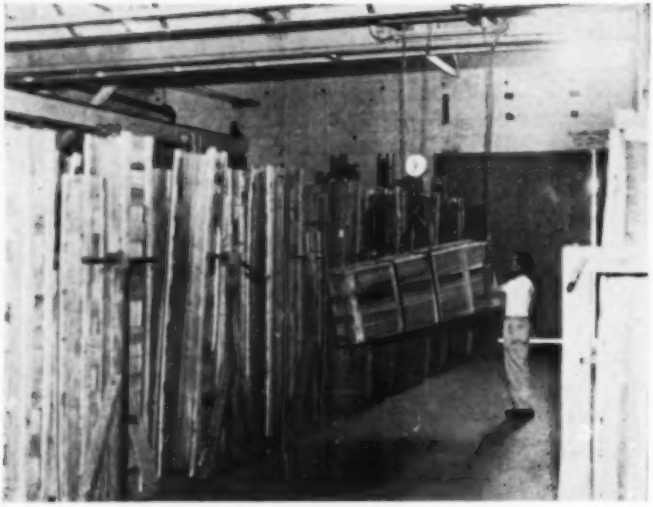

Fig. 6.—Main Aisle in Storage Warehouse.

from the ceiling. The crane has no connection with the floor. This permits moving the entire crane unit forward toward the highway truck, and shifting it back for a fresh crate of veneer. The vertical mast (E), of this crane is hung from the rear of the circular 90° segment (B); is at the center of the segment; and is braced at several points to the segment. The lower flange of this segment (B), a curved "I" beam, is traversed by rollers which support the boom (D) at any height or angle. The boom (D) is pivoted on the mast (E), and raised or lowered at a pivoted hook (F), some distance away from the mast (E), by a chain hoist (C), carried on rollers that run on the lower flange of the circular segment (B). The veneer crate is lifted at the outer end of the boom (D), by grab hooks (G), on both ends of a chain wound around the boom (D). These details are indicated in the photo.

The boom (D), when the crane is away from the highway truck, is lowered, the crate is secured by the grab hooks (G), lifted, and then the entire crane pushed forward toward the highway truck, until the crate can be lowered at the desired location. As in the case of the warehouse hoist, Fig. 6, this crane is provided with a drop cord (H), equipped with all operating controls.

In contrast with the arduous labors of the customary 6 to 8 man crew for manual loading, this crane reduces the loading time, requires at most a 2-man crew, and handles the crate with far less hazard of damage to the veneer, not to mention the safety of the workmen. Since most veneer is now shipped by highway truck, this crane meets all practical loading requirements. The same ingenuity, expressed in this crane for loading highway trucks, could adapt it to loading frieght cars for rail shipments.

Conclusions

Modern engineering, in the measuring and handling of veneer with hoists and cranes, as described, as produced marked advantages in improving the handling operations between cutting the veneer and its arrival at the customer's stock room. The prin-

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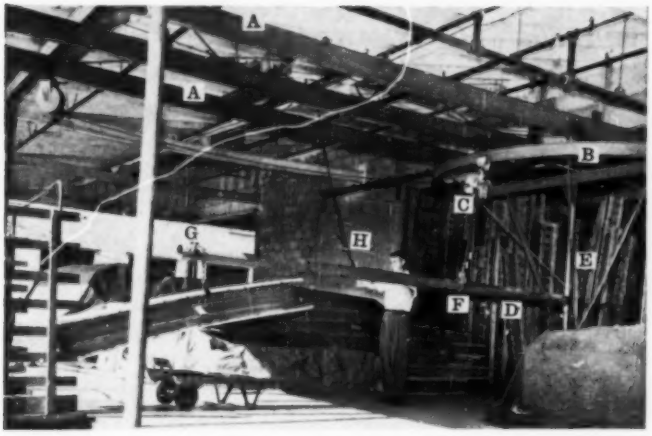

Fig. 7.—Crane for Loading Highway Trucks.

A-A. Overhead tracks for crane movement.
B. Segmental arc for swinging boom, D.
C. Electric hoist, traveling on segmental arc, B.
D. Boom for lifting crate of veneer.
E. Mast at center of segmental arc, B.
F. Pivot on boom, D, for raising or lowering by hoist, C.
G. Grab hooks and chain to lift crates of veneer.
H. Control cord.

cipal advantages can be tabulated as follows:

a. Shortens time in all handling operations.

b. Provides mechanical measuring by "electric eye".

c. Supplies complete conveyorization.

d. Mechanical pressing makes more symmetrical crates.

e. Eliminates accident hazards to the workmen.

f. Substitutes power for heavy human labor.

g. Economizes in warehouse space by vertical stacking.

h. Reduced size of required operating crews.

i. Produces savings in costs all along the line.

j. Substantially conserves the quality of the veneer.

This pioneer development, by the Stem organization has set up new and challenging standards, which, eventually, will do much to encourage better veneer handling in other factries, both old and new.

NOTE: *The author and editor wish to express their appreciation for the helpful co-operation of Mr. R. K. Stem of the Chester B. Stem, Inc., of New Albany, Indiana, for supplying data and photographs used in this article.*

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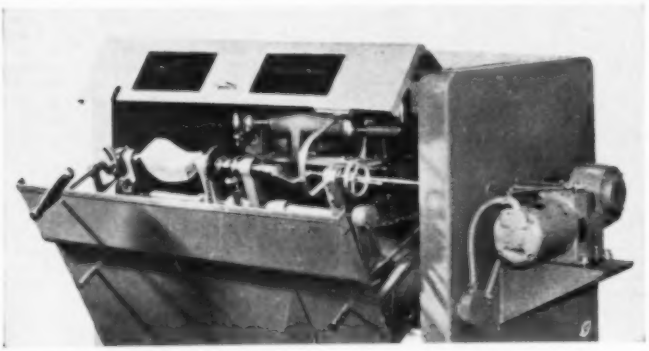

An open view of the Nash Golf Head Carver. The top door acts as a guard over the cutter head during the removal of the stock.

The Nash #112 Golf Head Carver is exceptionally accurate and was originally designed for the laminated type of head which is difficult to turn on other type of machines. The machine worked out beautifully for the laminated type of golf head, and of course works just as well on the persimmon head which is much easier to turn. When this machine is operating, the doors are closed thereby obtaining efficient dust collection and assuring the safety of the operator. When club is completely turned, the limit switch stops the feed action and the operator removes the club by simply pulling the lever which brings the rack away from the cutter head and at the same time opens the top and front doors.

When operating, the machine is closed and thus provides efficient dust collection and safety to the operator.

The top door acts as a guard over the cutter head during the removal of the stock. The photograph shows the quick lock mechanism for holding the stock between centers. With this patented quick lock, it is unnecessary to use excessive pressure in seating the centers as the weight of the handle is sufficient to hold the block securely between centers. This is important as there is no undue strain on the block which could cause distortion after the cut is completed and the block springs out of position due to excessive pressure of the locking center.

These are two cutter blanks on this machine, namely, a rougher and a finishing blank. Each one of these blanks has four inserted cutters. These are disc type which means that it is very easy to sharpen them as it only means putting them on a magnetic chuck of the surface grinder and taking off a few thousandths from the top to again secure the proper cutting edge. The follower roll is provided with a micrometer adjustment permitting minute adjustment to compensate for any material removed from the cutter discs.

Micrometer adjustment is also provided for the stock centering unit allowing close adjustment to eliminate taper.

After the operator loads the rough blank, he lets the handle in towards the cutter heads and as soon as cutting position is secured, he presses the start-button which motivates feed action. Machine will then complete its cutting cycle and stop when club is cut.

The cutter heads revolve at 6,800 revolutions per minute. The stock and model have a variable rate of revolution from 0 to 56. Usually it is common practice to revolve anywhere from 12 to 20 revolutions per minute depending upon whether persimmon or laminated stock is used. The feed is also variable from 0" up to 6" travel in 8 seconds. As these speeds are independent, it can be seen how flexible the machine is and production would depend upon the rate wanted to operate the machine and secure the quality desired. These machines are operating on laminated golf heads from 3 to 4 minutes per head and on persimmon up to 22 to 26 pieces per hour. It is possible for one operator to take care of five of these machines.

The machine is arranged so that a left hand club can be turned from a right hand model. To eliminate inaccuracies which will frequently exist when this is done due to the differences in pivot points between the model and the rough blank, has been compensated for by a rocker assembly on this rack.

Further details may be had by writing the J. M. Nash Co., 2360 N. 30th St., Milwaukee, Wisconsin.

Chas. Kerr to Represent Elco Screw in Cleveland Area.

Elco Tool & Screw Corporation, for over 25 years manufacturers of a quality line of screws, bolts and nuts which include slotted, Phillips head and Sems screws, recently announced the appointment of Mr. Charles L. Kerr as their representative.

Mr. Kerr is affiliated with the Kerr-Lakeside Industries, Inc., of 21850 St. Clair Avenue, Cleveland 17, Ohio, and has had over 23 years of experience in the fastening field. He will represent Elco in the eastern half of Ohio and the western sections of New York and Pennsylvania.

Benedict Mfg. Co. Announces New Knife Grinder

Benedict Manufacturing Company, Big Rapids, Michigan, announces a cabinet base in modern design either with or without coolant and tank, is now available on their Challenger Knife Grinder.

The Challenger is a recent development in knife grinders that features machined ways on which the grinding head travels on 8 dust-proof steel balls the full length of the knife bar without overhanging the bed. This construction

eliminates the need for lubricating and consequently there's no accumulation of abrasives on the ways to cause chatter and wear.

The grinder is regularly equipped with a cast iron knife bar and four "C" clamps that will hold a blade down to ½" wide, but a magnetic bar is now available if desired.

Standard models in bench or cabinet styles will grind planer knives and cutter blades up to 28" lengths and larger models are available on order.

New descriptive literature may be had by writing to the Company.

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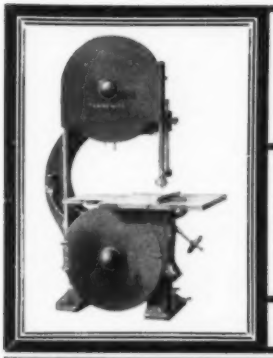

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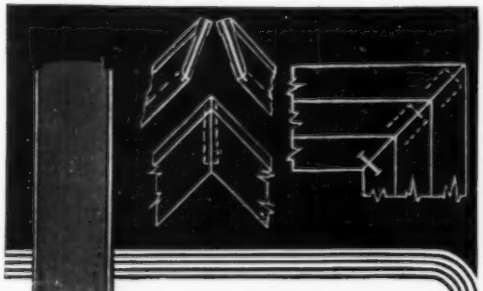

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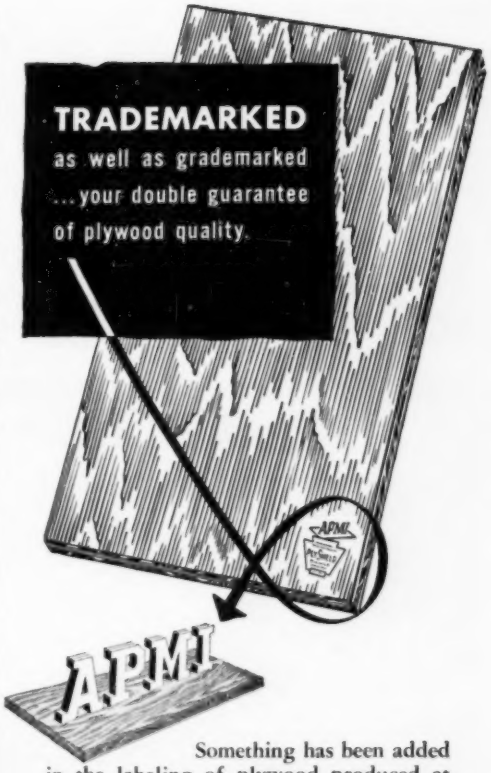

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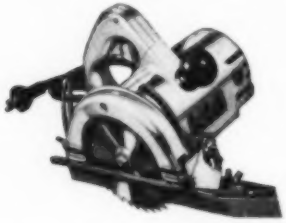
Announce New Light Weight, Portable Saw

Weighing only eleven pounds, a new portable electric saw has been introduced by the Milwaukee Electric Tool Corp., to provide a sturdy, fast-cutting all-purpose tool for manufacturers of wood products and millwork, and lumberyards. It is especially suitable for plant maintenance and repair in all types of industry, where it can also be used for cutting metal, asbestos,



concrete, stone and tile. This rugged tool is equipped throughout with ball and roller bearings for long, dependable service.

Known as the Milwaukee Silver Anniversary Model 660, this six-inch saw has a full one-horsepower motor, despite its light weight, and is fully balanced for one-hand operation.

Features of the saw include a Depth Gauge which adjusts from a "mere scratch" to a full two-inch straight cut; a Rip Guide, which provides accurate control for long cuts; and a mitering adjustment, from zero to 45 degrees, with a level cut of 1⅜ inches.

For maximum safety, the saw blade is on the right side. This keeps the saw on the remaining piece of wood. A telescoping guard closes automatically as soon as the blade is taken off the work. With the aid of a sawdust blower, the full-view line sight keeps the cutting edge fully visible at all times. All gears are hardened, of helical design, for longer and smoother operation. Shafts are precision ground. Use of a standard, six-inch round hole blade makes replacement a simple matter.

The newest type of insulating wire, combined with an improved insulating varnish and baking method, makes these armatures stand seven times the strain over ordinary armatures. The helical drive gear transmits 99 per cent of the motor power. Grease lubricants are used to eliminate oil leakage. A detachable shoe makes it easy and economical to replace if damaged.

Complete information is available from the Milwaukee Electric Tool Corp., Milwaukee 8, Wisconsin.

DeVilbiss Offers Paint Spraying Course

Five intensive one-week courses for Industrial Finishers are included in the DeVilbiss School of Spray Painting curriculum for the first half of 1950. Maintained as a service to all users of DeVilbiss equipment, these tuition-free courses include comprehensive instruction on all spray painting techniques and the function and care of spray equipment.

Classes lasting one week each will begin on January 23, March 27, April 17, May 8, and June 19, with all courses covering the same subject matter. For further information and application blanks, write for Forms F-224 and INS-753-A. Since class size is necessarily limited, it is advisable to write for reservations as early as possible to The DeVilbiss Company, 300 Phillips Avenue, Toledo 1, Ohio.

Finishing Furniture Told In Picture Story

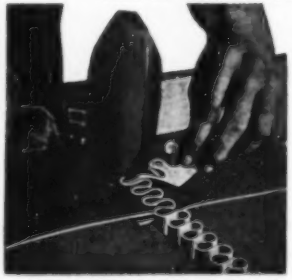
The picture story of Johnson's "All-Wax Method of Finishing Furniture" is a feature of a new brochure on a new procedure, being offered the furniture trade by S. C. Johnson & Son, Inc., Racine, Wisconsin.

The development of special finishing waxes, such as wax lubricant, and wax polishing compound, make possible the all-wax method of furniture finishing. Their uses, and recommended procedure on various types of furniture, is fully described in pictures and text in the attractive four-page brochure available on request from S. C. Johnson & Son, Inc., Racine, Wisconsin.

"For this job, we want someone who is responsible."

"That's for me. Everywhere I've worked, whenever something went wrong, I was responsible."

TOOL UP WITH WOODWORKERS'



SAND BELT SPLICING DIE

Makes smoother and stronger joint than any other method. It cannot pull apart. Used on paper or cloth backed sandpaper.

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221 South Jefferson Street Chicago 6, Illinois

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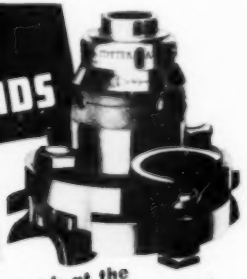
CURVED and FLAT PLYWOOD
CUT TO SIZE HOT PLATE BONDED
ROSENTHAL PLYWOOD SALES CO.
203 NORTH WABASH AVENUE
Chicago (1) Illinois Phone CEntral 6-8211
Sole Selling Agents for:
Suwannee Plywood Corp. } Greenville,
Greenville Veneer & Crate Co. } Florida

SHIMER DOOR HEADS



with exclusive all-around clearance cut . . .
will not chip the work at the fastest feed . . . give you high speed, top quality door production with operating economies you'll appreciate!

ECONOMIES ARE BUILT-IN! Shimer circular bits, for example, outwear conventional straight-type bits many times . . . give you 3" to 5" of available cutting edge and are easy, quick to sharpen with the convenient gauge supplied! Also . . . expansion feature gives you wider or narrower panel groove as required!

also . . . SHIMER EIGHT-BIT EXPANSION DOOR HEADS with self centering feature for high speed moulders

WRITE FOR YOUR FREE COPY OF OUR ILLUSTRATED PATTERN BOOK!

SAMUEL J. SHIMER & SONS, Inc.
75 RACE STREET • MILTON, PENNA.
SHIMER

Southwestern News

By Staff Correspondent

Dallas, Texas—Insul-Wood Manufacturing Corporation, manufacturing, was granted 50-year-charter of incorporation November 10, 1949. Authorized capital stock was listed at $100,000. Incorporators: B. J. Taylor, Earl G. Emry and T. K. Irwin.

* * *

Houston, Texas—Orange Wood Products Company, Inc., amended its charter of incorporation November 1, 1949, changing its name to Western Wood Products Company, Inc.

* * *

Bearden, Ark.—More than 30,000 feet of lumber and two dry kilns at the plant of the Simons Manufacturing Company here, were destroyed by fire November 25, 1949. Lloyd Anthony, president of the company, estimated the loss to be more than $25,000.

* * *

Natchez, Miss.—Joseph Montgomery Jones, 72-year-old owner of the J. M. Jones Lumber Company, died after a prolonged illness, at a local hospital November 23, 1949.

The J. M. Jones Lumber Company operated large hardwood band sawmills in Ferriday, La., and Natchez, Miss.

* * *

Jennings, La.—The workshop building of the St. Germain-Hohe Lumber Company and equipment therein, were destroyed by fire November 23, 1949. Loss was estimated at $10,000. Paul V. Nohe is manager.

* * *

Corpus Christi, Texas—Archer's of Corpus Christi, Custom-Built Furniture Shop, held grand opening November 30, 1949. The business is located at 3304 Ayers street, and is owned by William L. Archer.

* * *

Dallas, Texas—Harvey Ward, manager of Timber Structures, Inc., Texas Division, has announced the appointment of James J. Fite to the sales engineering staff of the corporation. The company manufactures timber roof trusses, timber bridges, beams and columns, drive-in threatre screen towers, glued laminated arches and other timber and wood specialties, and has home office and plant in Portland, Oregon.

* * *

Joyce, La.—Operations were recently resumed at the plant of the Tremont Lumber Company here after settlement of a 17-week strike.

* * *

Houston, Texas—H. E. Tomlinson Lumber Company, manufacturing, was granted 50-year-charter of incorporation November 7, 1949. Authorized capital stock was listed at $25,000. Incoropators: Mrs. H. E. Tomlinson, H. E. Tomlinson Jr., and H. E. Tomlinson.

* * *

Harrison, Ark.—Articles of incorporation were filed November 17, 1949, by the Willis-Ormond Lumber Company, Inc. Incorporators: Lorraine Willis, Jeanne Ormond, Virgil D. Wills and Hallie C. Ormond of Harrison. $300, (the minimum) was listed as authorized capital stock.

Alexandria, La.—Fire did damage estimated at $20,000 at the plant of Parks Wood Products Company here November 22, 1949. Included in the loss were dry kilns, an undetermined amount of hardwood lumber. The main plant and offices of the firm were untouched. Plans will be made shortly for rebuilding, according to A. Marchive, manager.

* * *

Sheridan, Ark. — O. R. Williams, member of the Arkansas Wood Products Association has received an award for "Outstanding and unselfish service" during the past year. He is Grant County representative and associate owner of the J. L. Williams & Sons Lumber Company here.

Ark. Forest Aid Offered

Little Rock, Ark.—State Forester Fred Lang has announced a new forest management service for landowners in 25 counties, chiefly in the southwestern part of the state. Arkansas is one of two states which offer landowners this program, designed to give timber owners a profitable system of cutting, selecting, and marketing timber. Cooperative effort of forestry personnel, county agents, Extension Service personnel and landowners are involved, and no charge will be made for the service. On request of the landowner, the forestry division will examine the woodland and make recommendations as to disposition of the timber, including marking and sale.

controlled quality

from forest to user
Bacon-McMillan
Rotary Cut Veneers

Bacon-McMillan Gum and Bay Poplar Veneers are SINGLE CLIPPED . . . which means the user gets more one-piece stock and more prime widths.

Tapeless Spliced and Dry Clipped to Size

LENGTHS UP TO 98 INCHES

Bacon-McMillan veneers can be delivered in any desired thickness or size. Uniformity is guaranteed by systematic checking.

The unlimited log supply, owned and cut by Bacon-McMillan, plus operation of the Danner Veneer Manufacturing Co. plant in Mobile, along with its own plant in Stockton, Ala., guarantees deliveries on scheduled dates.

BACON-McMILLAN MANUFACTURING Company
QUALITY VENEERS SINCE 1910
STOCKTON, ALABAMA

PERSONNEL CHANGES

Proven Promoted

John A. Proven, general sales manager, has been appointed vice president in charge of sales of Porter-Cable Machine Co., Syracuse, N. Y.

Gen. Box Adds Three to Board of Directors

The General Box Company of Chicago announces three changes in their board of directors.

Mr. E. E. Ames of Crawfordsville, Indiana, has been elected chairman of the board. Mr. Ames is a veteran of General Box, having aided in the foundation of the company in 1922 and then, prior to his retirement in 1947, serving as vice president and director of sales. He was graduated from Wabash College and has been serving as their director of alumni relations and member of the board of trustees. His entire business career has been devoted to the wooden box business. Immediately after graduating from college he started as a bookkeeper in a box company and worked up to president of his own company.

Two new directors were also added to the General Box directorate. W. C. Embry, vice president in charge of the Louisville plant, has been elected director to fill the position occupied by his father, the late Harry W. Embry. J. F. Ferguson, vice president and sales manager, has been advanced to director. Both Mr. Embry and Mr. Ferguson will retain their old duties in addition to their new responsibilities.

Wurlitzer Names Palmer

A. D. Palmer Jr., who for the past year has operated a public relations consulting service for western New York industrial companies, has been named advertising and sales promotion manager of Rudolph Wurlitzer Co., North Tonawanda, New York.

Continental Names 3

Victor Ladetto, sales manager of Continental Screw Company, New Bedford, Mass., recently announced three changes in the company's sales force.

Leonard A. Ashworth, who formerly covered the New York Metropolitan area, will now represent Continental in Maine, New Hampshire, Vermont and Connecticut.

Robert A. McCormick leaves the company's office staff to take over the New York Metropolitan area.

Paul R. Flemming, a new Continental representative, is covering the state of New York and a portion of Pennsylvania.

Rockwell Appoints Two

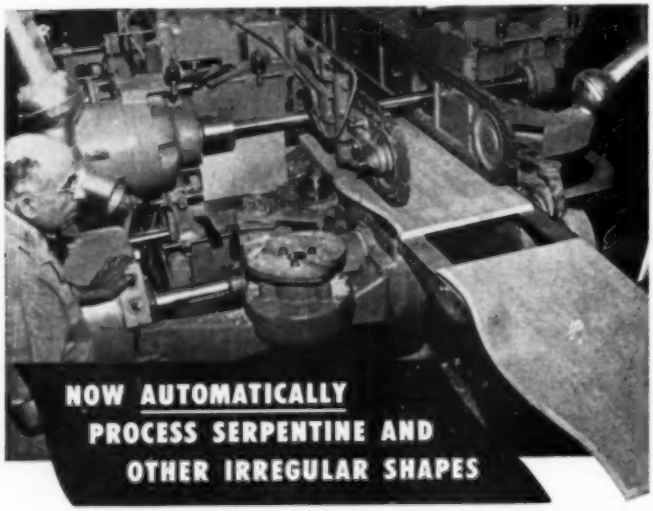
Irving G. Meyer has been appointed consumer sales manager of the power tool division of Rockwell Mfg. Co., Milwaukee. He has been with the division since 1942. John Stolarz, formerly with DeWalt Inc., Lancaster, Pa., has been named manager of Multiplex sales.

Dr. Bethel to Duke University

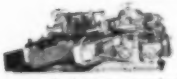
Raleigh, N.C.—Appointment of Dr. James Samuel Bethel, former plant manager of the Tidewater Plywood Company at Brunswick, Ga., as associate professor of forestry at N. C. State College was announced by Dr. Richard J. Preston, Jr., director of the College's Division of Forestry.

Dr. Bethel, who has already assumed his duties at the college, is a former faculty member at Pennsylvania State College and at the Virginia Polytechnic Institute. He was educated at the University of Washington, where he obtained his bachelor's degree, and at Duke University, where he earned his master's degree and doctorate in forestry.

Dr. Bethel's appointment raises to four the number of widely recognized wood technologists who are now engaged in wood utilization instruction and research at N. C. State College.



. . . with the GREENLEE No. 545 Double-End Tenoner incorporating the revolutionary new GREENLEE Irregular Shaping Attachment



Again the versatile GREENLEE Double-End Tenoner puts more unusual, time-consuming woodworking operations onto a *streamlined* production basis.

Serpentine edges, hex corners, round corners and various other irregular shapes, such as typical examples shown at right, become a matter of simple, swift *automatic* processing. Operated by an exclusive cam arrangement the new GREENLEE Irregular Shaping Attachment does work precisely, smoothly, speedily.

And to let you quickly "tailor make" cams in your own plant for faithfully producing various shapes of *your own designs*, the GREENLEE is equipped with an easily operated cam-cutting unit.

Now, more than ever, the GREENLEE Double-End Tenoner is "a woodworking plant in itself". For these shaping operations are in *addition* to the many others normally performed by this multi-purpose machine. Write for bulletin. Greenlee Bros. & Co., 1832 Twentieth Avenue, Rockford, Ill.

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GREENLEE WOODWORKING MACHINERY • BORERS • SAWS • TENONERS • PLANERS • SHAPERS • MORTISING AND BORING TOOLS

WOOD PRODUCTS CLASSIFIED ADS GET RESULTS!

MARKETS ★ FINANCIAL NEWS ★ PRICES

Lumber Survey Group Sees Good Business Ahead

The continued upsurge in building and the increased demand for lumber for furniture and industrial purposes brought about a reversal of the lumber market in the third quarter of 1949, according to the 74th Quarterly report of the Lumber Survey Committee to the Secretary of Commerce.

Mr. Richard A. Colgan, Jr., chairman of the committee, expressed the opinion that with continued good weather, fourth quarter shipments and production of lumber should exceed the 1948 levels.

There was a slight increase in average wholesale price of construction lumber in September, the first increase registered in 13 months.

While production in the third quarter, 8,244 million board feet, was below 1948 levels, there was a sharp increase in shipments and new orders during August and September, according to the report. The improvement in the lumber market has resulted in a better balancing of mill stocks and an increasing backlog of unfilled orders.

Building of new homes has increased month by month, reaching a peak in the third quarter when 294,000 new non-farm dwelling units were built, 11 percent more than in the third quarter of 1948. The committee estimates that the total of new homes constructed in 1949, including urban and farm houses, should be about 1,200,000.

Mr. Colgan predicted that rising labor costs at Southern sawmills, resulting from the 75 cent minimum wage which becomes effective in January, may force many softwood and hardwood mills out of business.

Video Set Production In Year End Boom

Manufacturers turned out some 360,000 sets in October, a gain of 35 per cent over the previous month. Low month of the year was July, with around 80,000 sets produced. FM-AM set production for October ran 83,013 and AM sets totaled 587,267. Thus, it is apparent that TV set production is well on its way to overtaking standard radio. And it has long since passed radio production in dollar value. Total number of television sets in use is expected to pass 3,500,000 by Jan. 1, 1950. The total stood at 3,025,000 on Nov. 1.

Casket Mfrs. Used 44 Mil. B. F. Of Lumber in 3rd Quarter

Manufacturers' shipments of wooden caskets during the third quarter of 1949 were 3.1 percent less than in the second quarter of 1949, and 2.8 percent less than in the third quarter of 1948. During the quarter, 76.8 percent of the shipments were wood caskets as compared with 77.5 percent in the second quarter and 79.0 percent in the third quarter of 1948. Shipments of metal caskets were 0.8 percent more than in the second quarter and 10.4 percent more than in the third quarter of 1948.

Estimated consumption of lumber in the casket industry in the third quarter of 1949 was 44 million feet, as compared with 46 million feet in the second quarter and 45 million feet in the third quarter of 1948.

M & M Earnings Up; Re-elect All Directors

The Board of Directors of the M & M Wood Working Company, makers of Malarkey Plywoods and doors, was re-elected by unanimous vote at the annual meeting of the corporation held November 17 at its Portland, Oregon home office. Approximately 75% of the corporations 1,400,000 outstanding shares of common stock were represented.

Re-elected were Herbert Malarkey, Mason Bingham, Huntington Malarkey, Thomas Autzen, Harold A. Miller, Neil Malarkey and Thomas B. Malarkey.

Net earnings for the first quarter of M & M's current fiscal year ending October 31, totaled $337,000 or 24 cents a share, Thomas B. Malarkey, vice-president and secretary announced.

This represents an upward trend from the previous quarter ended July 21 in which earnings totaled $245,563 or 17 cents a share, but is substantially lower than the $1,158,049 or 83 cents a share earnings recorded for the same quarter last year.

M & M's sales volume for the first quarter totaled $5,487,381 compared with last quarters $6,122,197 and the $6,984,429 for the same quarter last year.

Jamestown Sterling Ups Bedroom Furn. Production

Jamestown, N. Y.—Jamestown Sterling Corporation, has increased its production of bedroom furniture by 25 per cent and plans a total increase of about 50 per cent by the end of January, it was reported by Wilton C. Pickard, assistant treasurer.

A good market for bedroom furniture also has resulted in an increase in overage working hours at the plant to a present 52-hour week minimum for all employes, Mr. Pickard said.

Several of the 250 workers at the plant are working more than 60 hours a week to keep production increasing in line with market demands.

Mr. Pickard said Jamestown Sterling has expanded its plant by about 10 times its original size when it was started here in 1931.

B. C. Lumber Production

Ottawa, Ont.—Production of sawn lumber and ties in British Columbia totalled 227,966,000 feet in July last year, the Bureau of Statistics reported.

Production by mills on the coast fell 5.2 per cent while interior mills increased production by 4.1 per cent.

Shipments during the month were 198,236,000 feet, compared with 23[illegible]-129,000 feet in July last years, a decline of 15 per cent. Stocks on hand at the end of July were 372,429,000 feet, compared with 265,401,000 a year earlier.

Weyerhaeuser Earnings

Tacoma, Wash., Nov. 30—Weyerhaeuser Timber Company reported net earnings of $5.45 a share for the first nine months of 1949, in a statement of consolidated income issued to shareholders.

The company reported sales of lumber, lumber products, logs and pulp totalling $91,339,204 and other income (net) income was $17,037,823 for the nine months' period.

The firm's quarterly reports supplement annual financial statements and are subect to adjustment at year's end after accounts have been examined by independent public accountants.

Mengel Dividend

The Mengel Co., Louisville, on Nov. 21, declared its regular semi-annual $1.25 dividend on its $50 par value preferred stock, payable Dec. 31, to holders of record, Dec. 10.

Willet Co. Expands

Louisville, Ky.—Two new buildings are being added at the New Albany, Ind., plant of the Consider H. Willett, Inc., Louisville, furniture manufacturing concern, which will add approximately 10,000 square feet of floor space to the former Peter Klerner Furniture Co. plant, which was acquired by the Willett organization a short time ago.

Henry W. Wales, president, Willett, said that expansion plans for the New Albany plant figured on eventually employing around 300 people on the North side. Wayne Ellis, of the Louisville plant, has been made superintendent of the New Albany plant, which plans to feature cherry furniture. The Louisville plant has been active in maple, chiefly.

New Flooring Plant

Helena, Ark.—K. R. Peaslee of the state of Washington has concluded a lease-purchase agreement with the Phillips County Fair Association for use of the fair grounds and buildings in West Helena to operate a new oak flooring mill. Production will begin this month. Native white oak and red oak will be used for the new plant, which will ship its entire output to the Pacific coast.

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Reliable Sources For WOOD TURNINGS

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Brooklyn 11, N. Y.

Englewood Dowel Co.
Chicago 21, Ill.

R. F. Cooke Mfg. Co.
Orange, Mass.

Frary Wood Turning Co., Inc.
Wilton, Me.

Charlemont Wood Turning Co., Inc.
Charlemont, Mass.

Henry Rowe Mfg. Co.
Newaygo, Mich.

Harry A. Frock Cabinet Co.
Glenside, Pa.

Acme Wood Products Co.
1213 W. Third St.
Cleveland, Ohio

S. E. Overton Co.
South Haven, Mich.

E. W. Hannas
95 Liberty St.
New York, N. Y.

Geo. T. Frost & Son
Paterson 4, N. J.

Fabricated Lumber Products Co.
101 Park Ave.
New York 17D, N. Y.
(C/L Lots Only)

Munising Wood Products Co., Inc.
666 Lake Shore Drive
Chicago 11, Ill.

The Cheboygan Wood Turning Works
Cheboygan, Mich.

Hoge Lumber Co.
New Knoxville, Ohio

Levenson Woodturning and Manufacturing Co.
3755 South Broadway Place
Los Angeles 7, Calif.

American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

Northern Mill & Turning Co.
1828 W. Hubbard St.
Chicago 22, Ill.

E. L. Bruce Co.
1692 Thomas St.
Memphis, Tenn.

DOWEL RODS & PINS

Englewood Dowel Co.
Chicago 21, Ill.

C. B. Cummings & Sons Co.(Mfr's.)
Norway, Maine

American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

O. L. Baker & Son
2137 North St.
Euclid, Ohio

Henry Rowe Mfg. Co.
Newaygo, Mich.

TOY PARTS (Turned & Shaped)

Henry Rowe Mfg. Co.
Newaygo, Mich.

Englewood Dowel Co.
Chicago 21, Ill.

Munising Wood Products Co., Inc.
666 Lake Shore Drive
Chicago 11, Ill.

Geo. T. Frost & Son
Paterson 4, N. J.

E. W. Hannas
95 Liberty St.
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American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

E. L. Bruce Co.
1692 Thomas St.
Memphis, Tenn.

C. B. Cummings & Sons Co.
Norway, Maine

HANDLES

Charles I. Allen, Inc.
Pequabuck, Conn.

Boss Whipple Mfg. Co.
Fourth Ave. and South St.
Union City, Pa.

Englewood Dowel Co.
Chicago 21, Ill.

Geo. T. Frost & Son
Paterson 4, N. J.

Henry Rowe Mfg. Co.
Newaygo, Mich.

Munising Wood Products Co., Inc.
666 Lake Shore Drive
Chicago 11, Ill.

American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

The Cheboygan Wood Turning Works
Cheboygan, Mich.

O. L. Baker & Son
21371 North St.
Euclid, Ohio

C. B. Cummings & Sons Co.
Norway, Maine

ROPE MOULDINGS

American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

Klise Mfg. Co.
Grand Rapids 2, Mich.

AUTOMATIC LATHE

Wm. J. Oberdorfer, Inc.
Glendale, N. Y.

Englewood Dowel Co.
Chicago 21, Ill.

Henry Rowe Mfg. Co.
Newaygo, Mich.

Klise Mfg. Co.
Grand Rapids 2, Mich.

The Sperber Mfg. Co.
1815 Trombly
Detroit, Mich.

Geo. T. Frost & Son
Paterson 4, N. J.

E. W. Hannas
95 Liberty St.
New York, N. Y.

S. E. Overton Co.
South Haven, Mich.

American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

Munising Wood Products Co., Inc.
666 Lake Shore Drive
Chicago 11, Ill.

ORNAMENTAL TURNINGS

Henry Rowe Mfg. Co.
Newaygo, Mich.

STRAIGHT WOOD PARTS

The Delphos Bending Co. (Mfrs.)
901 S. Main St.
Delphos, Ohio

E. L. Bruce Co.
1692 Thomas St.
Memphis, Tenn.

FURNITURE & CHAIR PARTS

Charles I. Allen, Inc.
Pequabuck, Conn.

Henry Rowe Mfg. Co.
Newaygo, Mich.

Klise Mfg. Co.
Grand Rapids 2, Mich.

S. E. Overton Co.
South Haven, Mich.

E. L. Bruce Co.
1692 Thomas St.
Memphis, Tenn.

Hourigan Manufacturing Works
2601 Roanoke St.
Chattanooga, Tenn.

SPECIAL TURNINGS

Englewood Dowel Co.
Chicago 21, Ill.

Henry Rowe Mfg. Co.
Newaygo, Mich.

John C. Kohaut, Inc.
West Orange, N. J.

S. E. Overton Co.
South Haven, Mich.

Geo. T. Frost & Son
Paterson 4, N. J.

American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

The Cheboygan Wood Turning Works
Cheboygan, Mich.

Munising Wood Products Co., Inc.
666 Lake Shore Drive
Chicago 11, Ill.

E. L. Bruce Co.
1692 Thomas St.
Memphis, Tenn.

BUNGS & PLUGS

Henry Rowe Mfg. Co.
Newaygo, Mich.

American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

KNOBS—WOOD

Henry Rowe Mfg. Co.
Newaygo, Mich.

Charles I. Allen, Inc.
Pequabuck, Conn.

Geo. T. Frost & Son
Paterson 4, N. J.

American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

BENT WOOD

Von Behren Mfg. Co.
Evansville, Ind.

Philip Lehzelter & Son Co.
241 North Queen St.
Lancaster, Pa.

The Delphos Bending Co. (Mfrs.)
901 S. Main St.
Delphos, Ohio

WOOD PARTS TO ORDER

The Woodcraft Corporation
Bay City Mich.

Bennett Lbr. & Mfg. Co.
Zeeland, Mich.

Hoge Lumber Co.
New Knoxville, Ohio

S. E. Overton Co.
South Haven, Mich.

Henry Rowe Mfg. Co.
Newaygo, Mich.

Geo. T. Frost & Son
Paterson 4, N. J.

American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

Fabricated Lumber Products Co.
101 Park Ave.
New York 17D, N. Y.
(C/L Lots Only)

Klise Mfg. Co.
Grand Rapids 2, Mich.

Munising Wood Products Co., Inc.
666 Lake Shore Drive
Chicago 11, Ill.

E. L. Bruce Co.
1692 Thomas St.
Memphis, Tenn.

WOOD CARVINGS

Klise Mfg. Co.
Grand Rapids 2, Mich.

S. E. Overton Co.
South Haven, Mich.

Hourigan Manufacturing Works
2601 Roanoke St.
Chattanooga, Tenn.

BACK KNIFE TURNINGS

Henry Rowe Mfg. Co.
Newaygo, Mich.

American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

Munising Wood Products Co., Inc.
666 Lake Shore Drive
Chicago 11, Ill.

Ozark Furniture Mfg. Co.
Sulphur Springs, Ark.

WOOD SPOOLS & REELS

Henry Rowe Mfg. Co.
Newaygo, Mich.

American Woodworking Co.
1638 N. Lowell
Chicago 39, Ill.

MOULDINGS—CARVED, TURNED & EMBOSSED

Klise Mfg. Co.
Grand Rapids 2, Mich.

AUTOMATIC SHAPED PARTS

Hourigan Manufacturing Works
2601 Roanoke St.
Chattanooga, Tenn.

Out in the shop

Softening Logs For Cutting

Logs and flitches, before they are actually converted into veneer by machines designed for the purpose, must be preliminarily softened, in order that they may have the required degree of pliability and compressibility in their wood structure to allow of ready conversion. Some few woods have a fairly high degree of inherent pliability when cold. As a result, such woods can often be cut cold at a rotary lathe. Basswood is one such. In general, however, logs and flitches must first be subjected to a softening process. The time-honored process of softening consists of placing the logs or bolts into a vat of water and boiling them until they have arrived at the proper degree of pliability. However, except for the outer portion of logs, which may have partly dried, it is heat from the hot water, striking gradually inward and converting the already-resident moisture into a hot and steamy condition, that produces the required pliability, rather than hot water from the vat actually penertating the wood structure. Knowledge of this fact has been responsible for the development of another method of softening logs, which consists of placing them in a tight chamber, and turning steam into this chamber to accomplish the heating and consequent softening. Some use one method and some the other; each has its advantages and its disadvantages.

Handling Logs at Vats

Rough methods used for handling logs through the preliminary stages of shipping, storing and cutting to length will not do at boiling vats, especially when those vats are filled with scalding water at the time. Many a bad scald has resulted from splashing water at these vats. This has been especially true in places where inexperienced help has not realized that suddenly dumping cold logs into very hot water introduces a probability of ruining the logs themselves. Where logs are heated too suddenly, contained moisture may be generated into steam with sufficient speed that enough internal pressure will develop to cause splitting. This has happened in not a few cases.

In any event, it is wise to lower logs gently into the vats. This is easier on the vats themselves, and is better from every conceivable standpoint. In many cases, a monorail layout is used in connection with chain falls or with other types of hoists, to lower logs into boiling vats, to lift them out again and to carry them to the peeling deck or to the rotary lathes. Most veneer manufactured is made at rotary lathes, for the simple reason that this is the fastest and best method known, other things being equal. Where some other method of conversion is selected, it is because a different grain effect is wanted in some fancy veneer than can be obtained by the rotary process, or because burls, stumps or flitches are being processed which will not mechanically lend themselves to the rotary lathe process.

Factors Affecting Choice of Method

Choice between the boiling and steaming treatment for softening logs hinges on many factors in each individual plant, which can be considered here only in part. Among these factors are the degree of mechanical excellence of the rotary lathe being used, the kinds or species of timber that are chiefly handled and converted, and the required degree of excellence in veneer produced, in addition to actual cost factors inherent in the two

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different kinds of softening treatment. There is the inalterable fact that veneer being cut from a log by the rotary process must be bent, at the time of conversion, in the opposite direction from that it occupied while it was still a part of the long. Dry wood will not endure such treatment. It will split. Therefore, any wood which is actually dry must first have moisture added to it as a prerequisite to making it pliable. Where logs have dried considerably in their "outer shell", or in the outward portion of their volume, the boiling process has a strong advantage, for although actual vat water does not strike far inward, as does the heat from the water, it is nevertheless true that vat water does penetrate outer and dryer wood to a considerable extent, thereby softening it.

The thicker the veneer being produced at a lathe, the greater is the inherent strain in its under side as it is bent in the opposed direction at conversion, and the greater, consequently, is the probability of its splitting in process of cutting. A nosebar is run against the surface of the revolving bolt just in advance of the veneer knife, to prevent such splitting, *partly* by *supporting* the wood just ahead of the knife edge, but *more* by actually compressing it. The degree of efficiency obtained in the compressing action of the lathe nosebar is inevitably and necessarily in relationship to the degree of pliability of the wood, as obtained by the softening treatment. It is possible to soften the wood structure too much, as well as too little. Therefore, softening treatment is often based on the kind of wood being handled, as well as on the thickness of veneer being cut. Green wood, obviously, will require less prior softening than partly-seasoned wood of the same species.

The factor of too-sudden heating of logs must always be kept in view. Some woods split much more readily than others, and will therefore withstand less shock or strain as touching temperature differentials between their circumferential and their inner volume. With such woods, more than ordinary care must be employed to bring them up to the desired temperature gradually, so the exterior portion of the bolt does not become too hot before some part of the heat has had sufficient time to strike into the interior. On the other hand, it is entirely possible to give such logs too long a treatment, with the result that the outer wood will become so soft as to be mushy. Then, it cannot be successfully cut.

Differences of Opinion

There will always be some difference of opinion between different rotary lathe operators, as to whether steaming or boiling is the best treatment for softening logs; the fact is that the question can never be fully and finally answered. Both heat and moisture are necessary to soften a log properly. In steaming, very little moisture penetrates the outer volume, but the heat penetrates. It follows that logs which naturally contain a considerable amount of moisture or water can be put in very good condition by steaming, for the heat from the steam strikes inward, and the resident water in the bolt combines with this in-striking heat to produce the required steamy and plastic result. On the other hand, with logs that are quite dry, boiling is certainly the best method. A little thought bring assurance that this softening problem bears backward in a considerable degree on associated benefits of pond storage. Logs which are pond stored will certainly not dry out so much as those kept in dry storage.

With regard to this entire problem, there is actually no substitute for experience. Just as different species of wood require different softening treatments for best results, with reference to type and length of treatment, the temperature held during the treatment, etc., so there will be differences depending on the length of time that has elapsed since the logs were brought from the timber; on whether they were kept in dry or pond storage since that time, and also depending on the actual size or diameter of the logs.

While there is no factual material we can here set down to serve as a substitute for experience in log softening, it is a fact that results of experience can be in some measure tabulated for use in any given plant. That is, by carefully observing what softening treatment gives best results in specific cases, these observations can be resolved into application as the most scientific methods available in any given plant. Both time and temperature control of either a steaming or a boiling operation can be handled automatically through modern instru-

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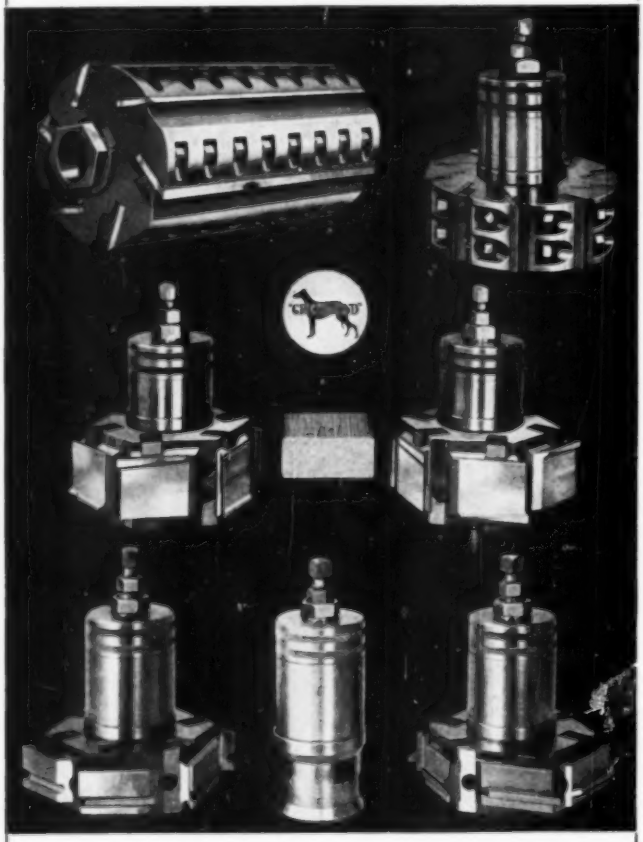

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ments, and it is not uncommon to find them so controlled. Such control problems may profitably be submitted to specialists in this line of work. The fact is that an increased number of temperature control problems have developed in the veneer and plywood industries of late years. Whether the temperature problem be connected with log boiling vats, log steaming chambers, veneer dryers, panel dryers or hot plate presses, those who specialize in temperature control problems will be able to handle it. It is always much safer and better not to guess at any of these matters.

Factor of Operator Safety

The factor of operator safety has entered largely into a selection of log-softening methods. There have been enough deaths and bad accidents at log boiling vats that insurance companies inevitably favor the steaming method, with the result that insurance rates are often lower where the steaming method is employed. Part of this added safety is due to the fact that the steaming operation can be carried on entirely above floor level. Gravity thus presents no hazard. The floor or platform adjacent to a boiling vat is subjected to repeated sloshings with water, draining from the logs, and inevitably becomes slippery.

However, the boiling method is so clearly economical with regard to the amount of heat it is necessary to use, and it is so often advantageous from the veneer-cutting standpoint, that steaming is unlikely to ever fully displace it. The steaming process must be carefully controlled. Unless very careful control is practiced, there is grave danger of splits and checks developing in logs. Boiling greatly lessens this danger, for it is inherently a less violent treatment. Steaming will bring the outer surface of a log to a very high temperature in most cases, before much heat begins striking inward. The boiling process allows the temperature to be readily controlled in the range below 212 degrees F. In fact, operators have sometimes placed logs of certain types into cold vat water, and have gradually brought the water to a boil, thus providing a *very* gentle treatment. This may be regarded as one extreme in possible log-softening treatment, and a fast-steaming treatment is the other possible extreme. Time economy directly as such is on the side of steaming, for it is obvious that the more slow and gentle the softening process used, the greater will be the length of time required for bringing any log into proper condition for cutting.

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New York State News

By Staff Correspondent

Boonville, N. Y.—Lester Martin and William J. Slifka, Jr., members of the new Boonville Furniture Corporation, spoke about the company's plans at a meeting of the Boonville Kiwanis Club. They said the firm plans to continue the production of tennis tables. The firm plans to begin operations by January and employment will range between 100 and 125.

* * *

Buffalo, N. Y.—A business name has been filed in the Erie County clerk's office for the Brite Wood Manufacturing Co., 115-117 Brayton, by Leonard S. Capizza and Joseph F. Ambrose.

* * *

Jamestown, N. Y.—Oscar Witt, of Marshfield, Wis., was elected chairman of the National Cost Club of the Hardwood Plywood Institute at a two day conference of the club in Hotel Jamestown.

Regional directors chosen were J. W. Balate, of Memphis, Tenn., for the southern district; Andrew Jochum, of Jamestown, for the northeastern district; and Mr. Witt for the lake states area.

* * *

Jamestown, N. Y.—Upwards of 75 manufacturers of wood furniture from Jamestown and area were entertained at Moon Brook Country Club by E. I. du Pont de Nemours Company, and were shown films on wood finishing by the company which produces the finishes used by local factories.

Dinner preceded the program, which was composed of three films. One depicted the manufacture of furniture from raw wood through assembly and to the final finishing. Another showed the best methods of finishing furniture, the correct way to sand wood, and other fine points of finishing. Third was on correct and incorrect methods of finishing, care of spray guns, and how not to waste material.

* * *

Jamestown, N. Y.—Frank Hemingway, former business manager of American Forest Products Industries, Inc., will open a public relations office at 406 East Fourth St., after January 1. He will serve the furniture industries of the Jamestown area. He formerly was engaged in marketing research and advertising in Chicago, Kansas City and New York.

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Obituary

Thomas Cathey Dies

Memphis, Tenn. — Thomas Milton Cathey, 75, for 45 years veteran lumber man of Memphis, was instantly killed in an automobile collision at Columbus, Miss., on Nov. 12. For several years he has made his home in Montgomery, Alabama, and was returning there, from a visit in Memphis with his son and daughter, when he was killed. He was buried in Memphis.

Death Takes Charles Green

Memphis, Tenn. — Funeral services were held in Memphis on November 13 for Charles Morton Green, 63, secretary of the Memphis Veneer Company for five years. Before that time he was sales manager for Anderson-Tully Co. He was an active member of the Lumbermen's Club of Memphis, at the time of his death, being chairman of the Membership Committee.

Ward A. Hillerich

Louisville, Ky.—Ward A. Hillerich, president, Hillerich &. Bradsby Co. large consumers of hickory timber, in production of baseball bats, also large producers of golf clubs, died at 11 a.m., Sunday, Nov. 27, after nearly a years' illness, during which he was a patient at Kentucky Baptist hospital, Louisville; moved to New York for observation, and back to the local hospital shortly before his death.

Mr. Hillerich was 44 year of age. He attended Louisville Male High, and was a back on the football team about 25 years ago. From there he attended Notre Dame but was injured in scrimmage during the days of the Four Horsemen, and never played a game for Notre Dame.

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*Copeland Lbr. Co. - Ontonagon & Atlantic, Mich.
Sales Office—135 So. LaSalle Street, Chicago—Hardwood Lumber, Dimensions, Dry Kilns and Planer.

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*Goodman Lumber Company - - - Goodman, Wis.
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*†Yawkey-Bissell Corp'n - - - - White Lake, Wis.
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*Michigan Pole & Tie Co. - - - - Newberry, Mich.
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*Ahonen Lumber Company - - - - Ironwood, Mich.
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*C. M. Christiansen Co. - - - - - Phelps, Wis.
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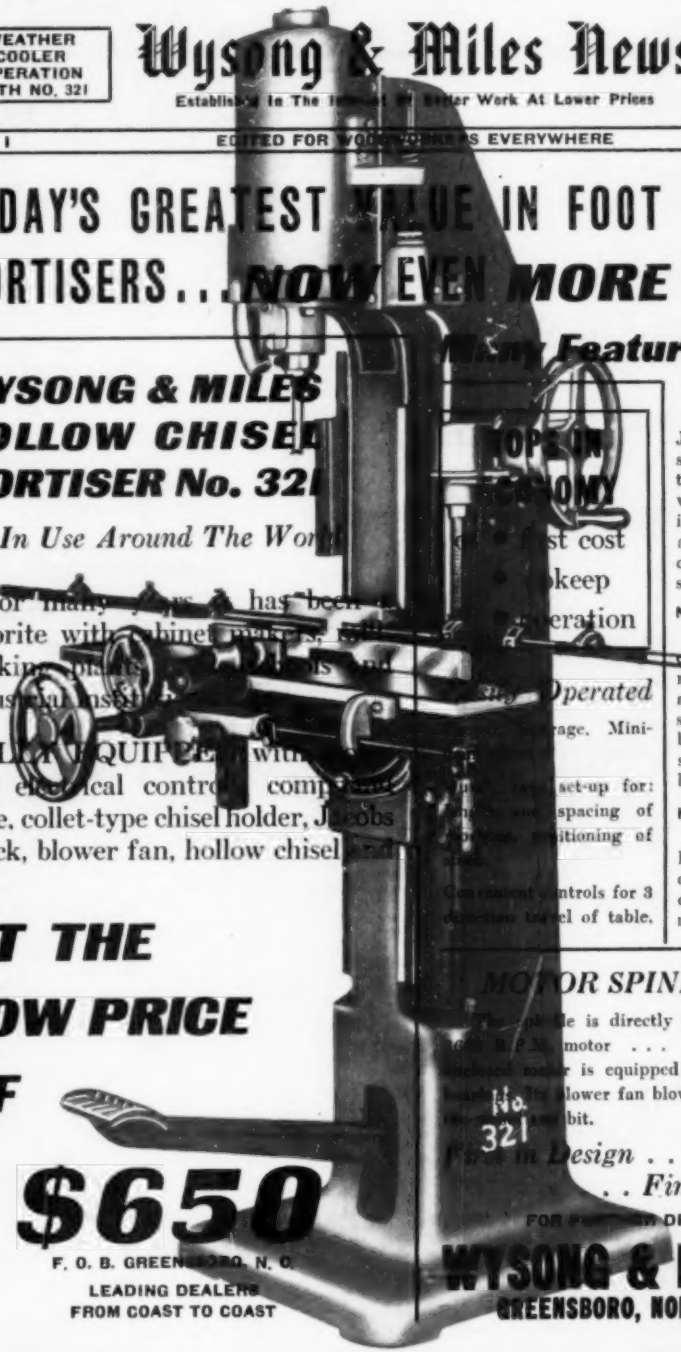

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